



Preview – Information



Thank you for your interest in this product. Within this preview, you will see:

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Google Slides Lessons Preview





Saskatchewan Math Curriculum

Shape & Space – Grade 6

3-Part Lesson Format

Part 1 – Minds On!

- Learning Goals
- Discussion Questions
- Quotes
- And More!

Learning Goal

We are learning to use a protractor to measure and draw angles up to 360° so we can understand how angles work when measured clockwise and counterclockwise.



Finding Obtuse, Acute, Straight, and Right Angles

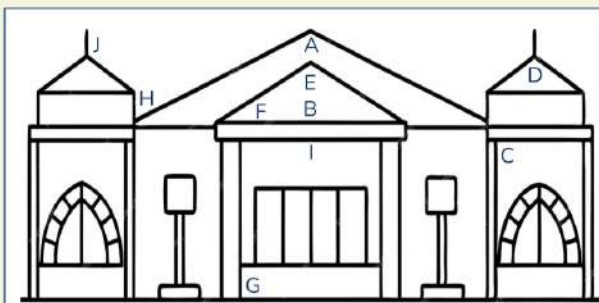
What are the angles that are labelled with a letter? Drag the labels to answer.

Right

Acute

Obtuse

Straight



Letters	Name of Angle
A	
B	
C	
D	
E	
F	
G	
H	
I	
J	

Part 2 – Action!

- Writing
- Matching
- Drag and Drop
- Drawing
- And More!

Part 3 – Consolidation!

- Exit Cards
- Quizzes
- Reflection
- And More!

Interior Angles – Triangles - Word Problems

- 1) Riley is making paper party hats in the shape of isosceles triangles. Each hat has two angles measuring 58° . What is the third angle?

- 2) a) Two angles of a triangle measure 92° and 38° . What is the measure of the third angle?

- b) Based on your answer, is the triangle acute, right, or obtuse?

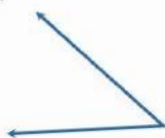
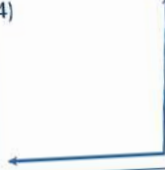


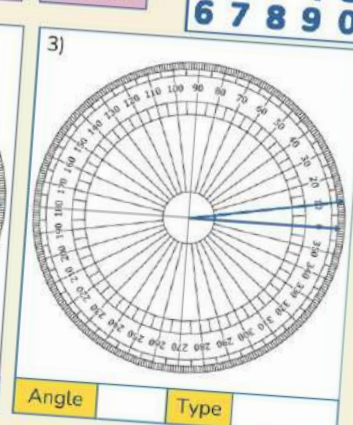
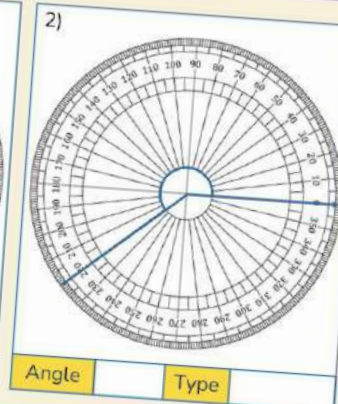
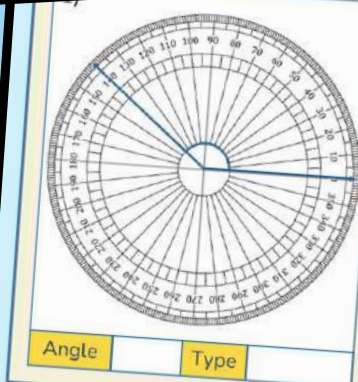
Saskatchewan Math Curriculum

Shape & Space – Grade 6

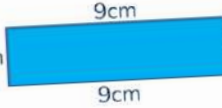
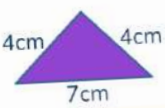
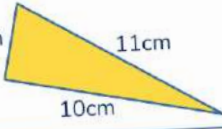
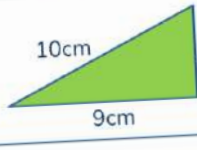
Analyzing Angles – Estimating – Multiple Choice

Which angle do you think it is? Drag the circle to your answer. Do not use a protractor.

1) 	2) 	3) 	4) 	5) 
a) $\angle = 90^\circ$	a) $\angle = 80^\circ$	a) $\angle = 60^\circ$	a) $\angle = 80^\circ$	a) $\angle = 140^\circ$
b) $\angle = 70^\circ$	b) $\angle = 45^\circ$	b) $\angle = 25^\circ$	b) $\angle = 100^\circ$	b) $\angle = 125^\circ$
c) $\angle = 55^\circ$	c) $\angle = 30^\circ$	c) $\angle = 45^\circ$	c) $\angle = 95^\circ$	c) $\angle = 160^\circ$
d) $\angle = 160^\circ$	d) $\angle = 70^\circ$	d) $\angle = 95^\circ$	d) $\angle = 110^\circ$	d) $\angle = 150^\circ$



Find the perimeter of the shapes below. Drag the numbers to complete the equations.

 1cm 5cm 1cm 5cm _____ + _____ + _____ + _____ = _____ cm	 2cm 4cm 4cm 2cm _____ + _____ + _____ + _____ = _____ cm	 9cm 2cm 9cm 2cm _____ + _____ + _____ + _____ = _____ cm
 4cm 4cm 7cm _____ + _____ + _____ = _____ cm	 4cm 10cm 11cm _____ + _____ + _____ = _____ cm	 10cm 9cm 5cm _____ + _____ + _____ = _____ cm



Saskatchewan Math Curriculum

Shape & Space – Grade 6

Area – CM Squared

Solve using the formula: $A = b \times h$.

1 2 3 4 5 6 7 8 9 0

7cm
6cm

$A = b \times h$
 $A = \underline{\quad} \times \underline{\quad}$
 $A = \underline{\quad} \text{ cm}^2$

10cm
4cm

$A = b \times h$
 $A = \underline{\quad} \times \underline{\quad}$
 $A = \underline{\quad} \text{ cm}^2$

3cm
7cm

$A = b \times h$
 $A = \underline{\quad} \times \underline{\quad}$
 $A = \underline{\quad} \text{ cm}^2$

height

base

Calculating Volume

Fill in the blanks to investigate the area of the base and the height. Drag the numbers to answer.

1 2 3 4 5 6 7 8 9 0

1)

Area of Base	Height	Volume

2)

Area of Base	Height	Volume

3)

Area of Base	Height	Volume

4)

Area of Base	Height	Volume

5)

Area of Base	Height	Volume

6)

Area of Base	Height	Volume

Yes
No



Workbook Preview





Grade 6

Shape and Space

	Curriculum Expectations	Pages
SS6.1	Demonstrate understanding of angles including: • identifying examples • classifying angles • estimating the measure • determining angle measures in degrees • drawing angles • applying angle relationships in triangles and quadrilaterals.	18-53, 58-69
SS	Extend and apply understanding of perimeter of polygons, area of rectangles, and volume of right rectangular prisms	
Preview of 125 pages from this product that contains 312 pages total.		
SS6.3	including: • classifying types of triangles • comparing side lengths • comparing angle measures • differentiating between regular and irregular polygons • analyzing for congruence.	5-17, 54-57
SS6.4	Demonstrate understanding of the first quadrant of the Cartesian plane and ordered pairs with whole number coordinates	120-135
SS6.5	Demonstrate understanding of single, and combinations of, transformations of 2-D shapes (with and without the use of technology) including: • identifying • describing • performing	136-169
TQ	Tests and Quizzes	70-71, 117-119, 170-172

Name: _____

6

Regular vs Irregular Polygons

Regular

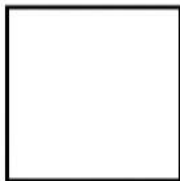
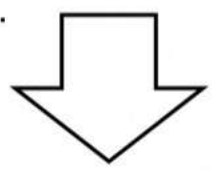
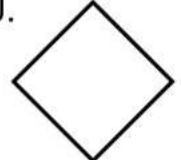
Regular Polygons

- All sides are the same length
- All angles are the same

Irregular

Part 1

Label the polygons regular or irregular

1. 	2. 	3. 	4. 	5. 
6. 	7. 	8. 	9. 	10. 

Part 2

Draw regular and irregular polygons

1)	2)	3)	4)	
Regular	Regular	Regular	Regular	Regular
6)	7)	8)	9)	10)
Irregular	Irregular	Irregular	Irregular	Irregular

Congruent Shapes

Directions Use a protractor/ruler to check the congruency. Circle the congruent shapes.

Congruent shapes have the same size and shape. This means that the side lengths and angles are the same. Location and orientation do not affect congruency.



Congruent

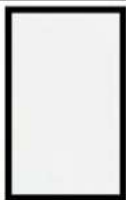


Not congruent

1)



a)



b)



c)



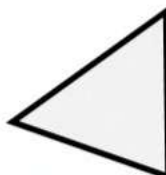
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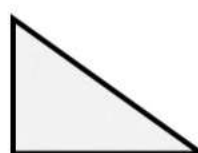
a)



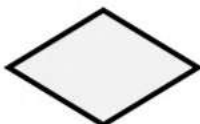
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c)



3)



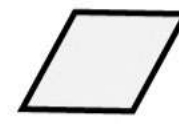
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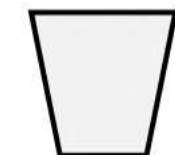
b)



c)



4)



a)



b)



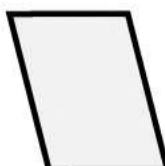
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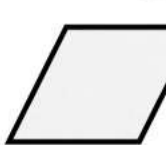
5)



a)



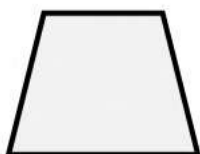
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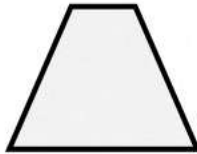
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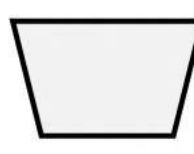
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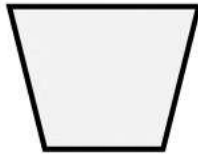
a)



b)



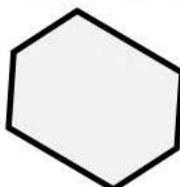
c)



7)



a)



b)



c)

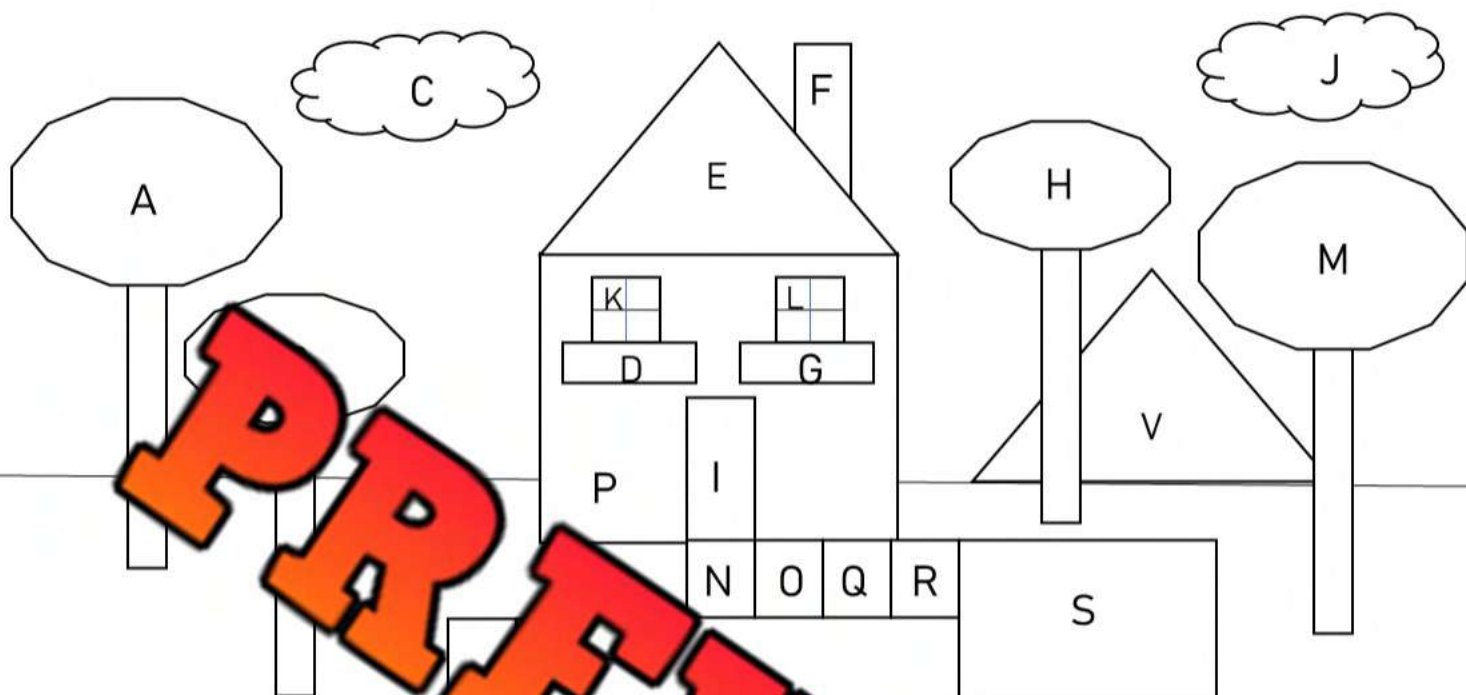


Name: _____

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Curriculum Connection
SS6.3

The Congruent House



Instructions

Answer the questions below by looking at the house above

- 1) Which shape is congruent to A?
- 2) Which shape is congruent to shape C?
- 3) Which shapes are congruent to shape N?
- 4) Which shape is congruent to shape B?
- 5) Which shape is congruent to shape E?
- 6) Which shapes are congruent to shape D?
- 7) Which shape is congruent to shape T?
- 8) Which shape is congruent to shape L?

Matching Activity: Congruent Shapes

Objective

What are we learning about?

Students will learn to identify and match congruent shapes through a fun and interactive activity.

Materials

What you will need for the activity.

- Matching game cards. Each card will have a different shape that can be paired to another congruent shape.
- A small table or clear floor space for the activity.



Instructions

How you will complete the activity.

1. Divide the class into groups of 3 or 4. Give each group a set of matching game cards. (Provided)
2. Have each group lay all the cards face down in a grid on a table or clear floor space.
3. The students take turns flipping over two cards at a time, trying to find a matching congruent shape.
4. If a student finds a match, they remove those cards from the grid and keep them.
5. If the cards do not match, they are turned back over, and the next student takes a turn.
6. The game continues until all the cards have been matched.
7. After the game, review the congruent shapes with the class.

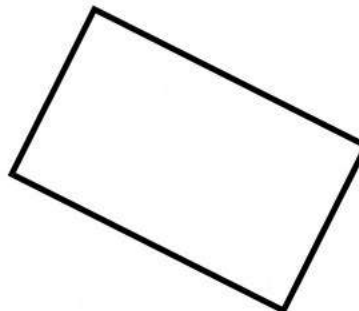
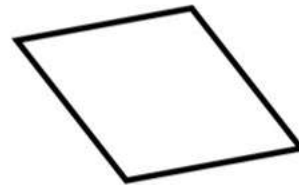
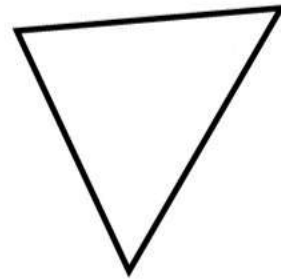
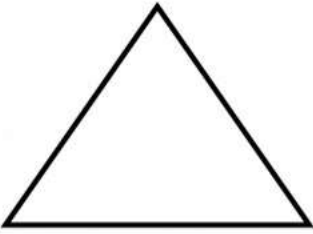
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Curriculum Connection
SS6.3

Cards

Memory Game Cards



PREVIEW

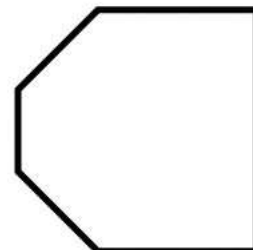
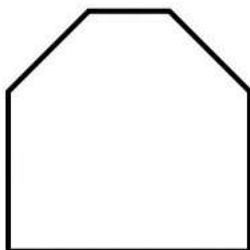
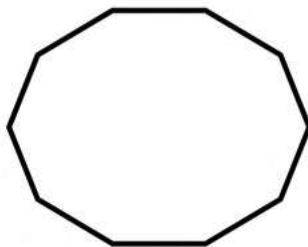
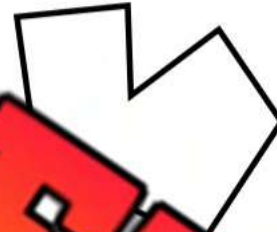
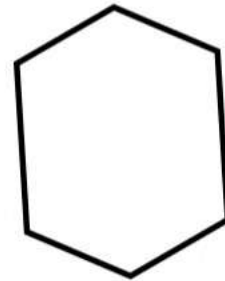
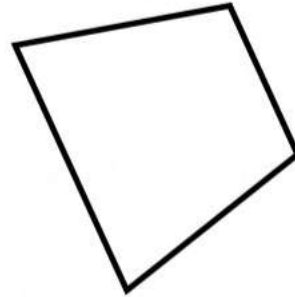
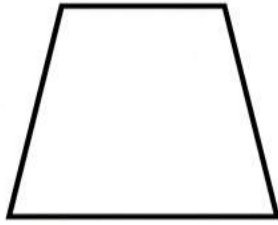
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Curriculum Connection
SS6.3

Cards

Memory Game Cards



PREVIEW

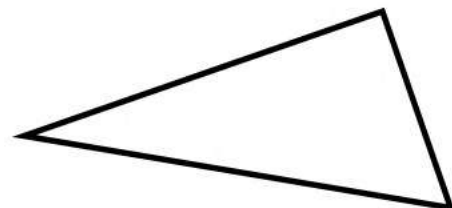
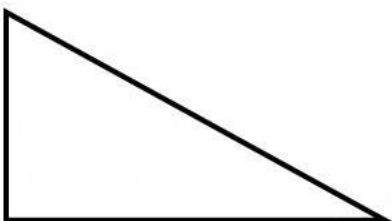
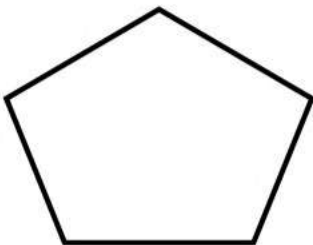
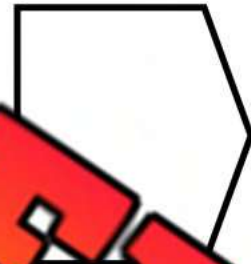
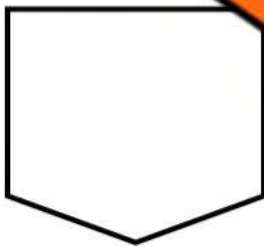
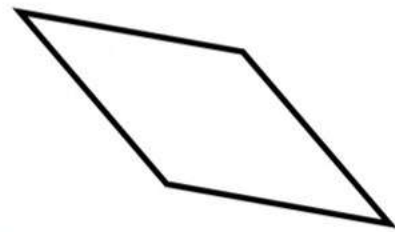
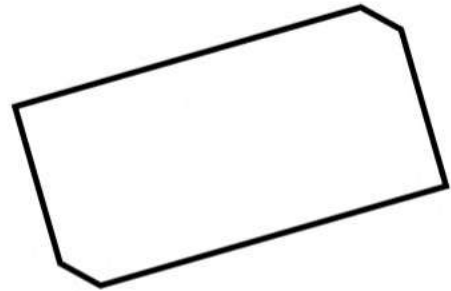
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Curriculum Connection
SS6.3

Cards

Memory Game Cards



PREVIEW

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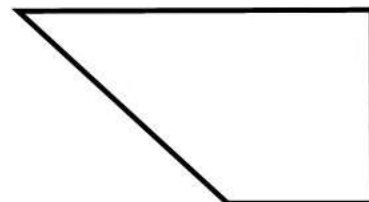
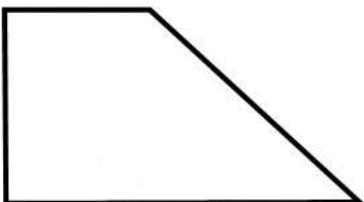
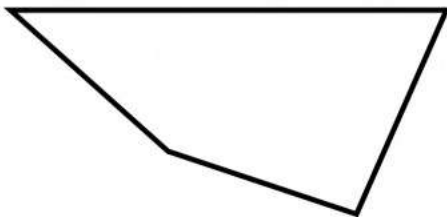
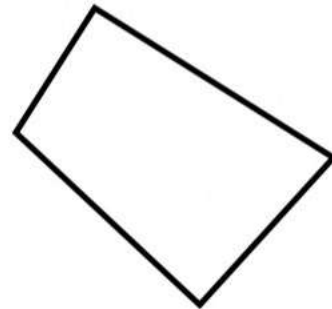
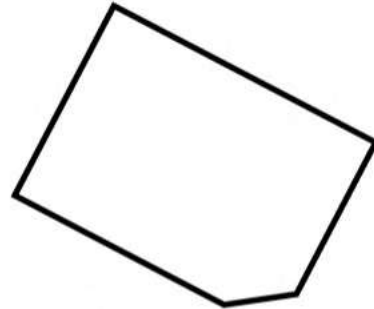
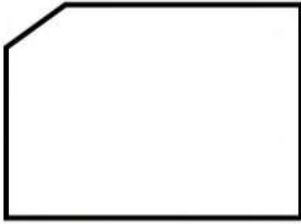
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Curriculum Connection
SS6.3

Cards

Memory Game Cards

PREVIEW



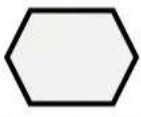
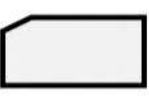
Exit Cards

Cut Out

Cut out the exit cards below and have students complete them at the end of class

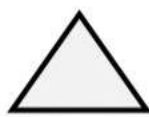
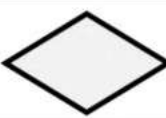
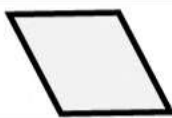
Name: _____

Put a check mark (✓) if the shapes are congruent and an X if they are not.

1)			
2)			
3)			
4)			

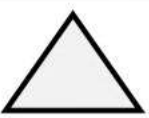
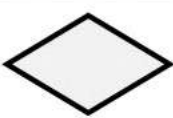
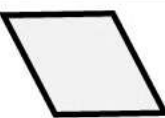
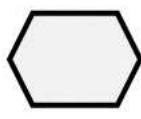
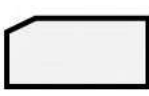
Name: _____

Put a check mark (✓) if the shapes are congruent and an X if they are not.

1)			
2)			
3)			
4)			

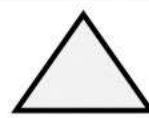
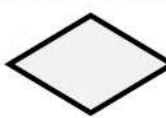
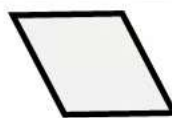
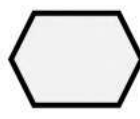
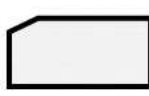
Name: _____

Put a check mark (✓) if the shapes are congruent and an X if they are not.

1)			
2)			
3)			
4)			

Name: _____

Put a check mark (✓) if the shapes are congruent and an X if they are not.

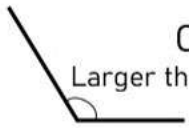
1)			
2)			
3)			
4)			

Name: _____

18

Curriculum Connection
SS6.1

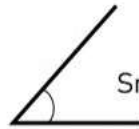
Naming Angles



Obtuse
Larger than right angle



Right angle
 90°



Acute
Smaller than right angle



Reflex
Larger than 180°

Instructions

Label the angles acute, right, obtuse, or reflex

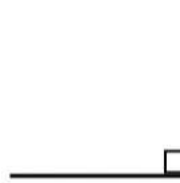
1)



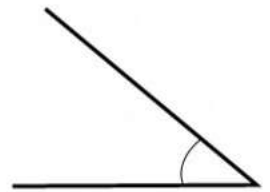
2)



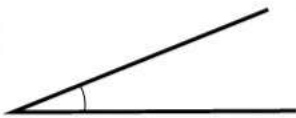
3)



4)



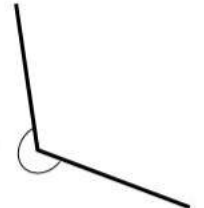
5)



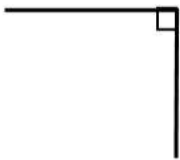
6)



8)



9)



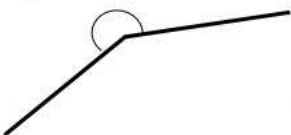
10)



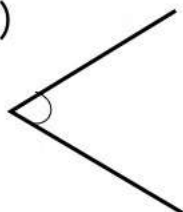
11)



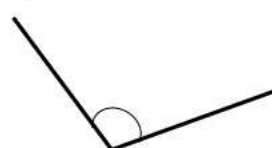
13)



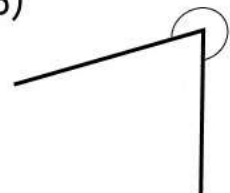
14)



15)



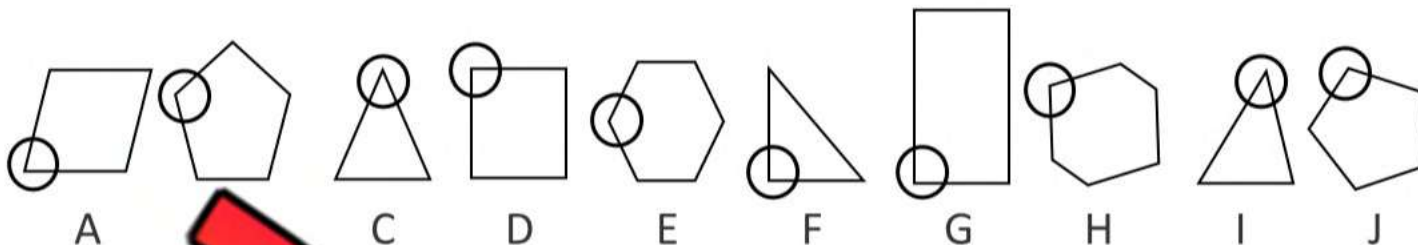
16)



Sorting Angles

Part 1

Sort the angles into the categories below



Angles	Right Angle	Obtuse	Acute
Letters			

Part 2

Sort the angles into the categories below



Angles	Right Angle	Obtuse
Letters		

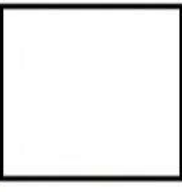
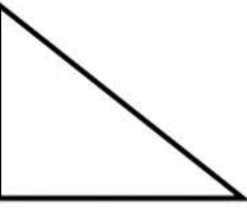
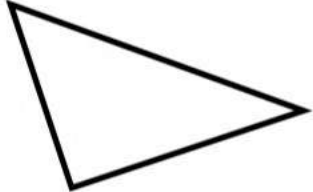
Part 3

Circle the angles below

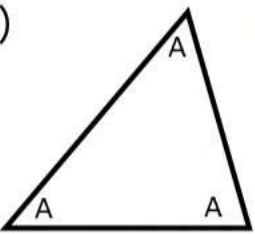
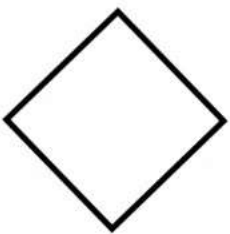
Drawings			
Angles	Right Angle	Obtuse	Acute

Angles in Triangles and Rectangles

Part 1 Label the right angles with a small square and write how many right angles there are

1) 	2) 	3) 	4) 

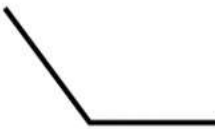
Part 2 Label the acute (A), obtuse (O) or right (R) inside the shapes below

5) 	6) 	7) 	8) 
Acute = 3	Acute =	Acute =	Acute =
Obtuse = 0	Obtuse =	Obtuse =	Obtuse =
Right = 0	Right =	Right =	Right =

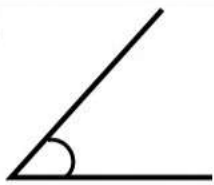
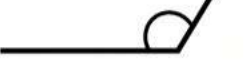
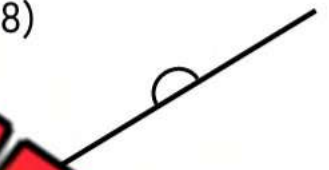
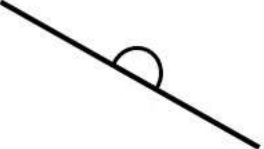
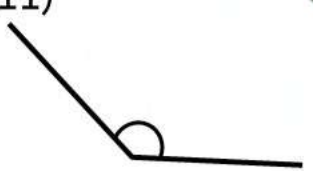
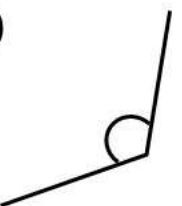
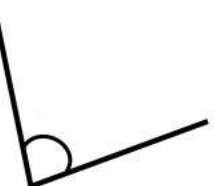
Part 3 Draw a picture of a shape with the number of angles it shows

9)	10)	11)	12)
Triangle	Triangle	Rectangle	Triangle
Acute = 2	Acute = 3	Acute = 0	Acute = 2
Obtuse = 1	Obtuse = 0	Obtuse = 0	Obtuse = 0
Right = 0	Right = 0	Right = 4	Right = 1

Naming Angles – Right, Obtuse, Acute, Straight, and Reflex

Right Angle - 90°	Acute Angle - smaller than 90°	Obtuse Angle - larger than 90°	Straight Angle - 180°	Reflex Angle - larger than 180°
				

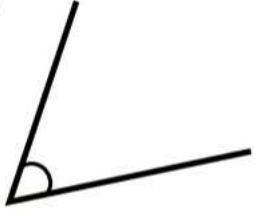
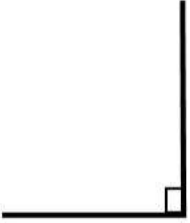
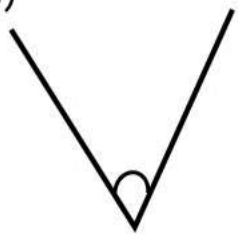
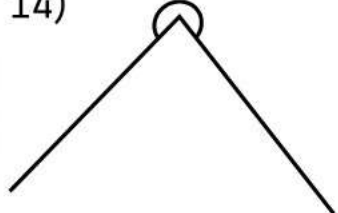
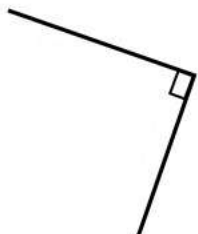
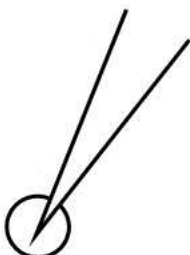
Instruction Label the angle – straight, acute, obtuse, right, or reflex

1) 	3) 	4) 
5) 	6) 	8) 
9) 	10) 	11) 
13) 	14) 	15) 
		16) 

Naming Angles – Right, Obtuse, Acute, Straight, and Reflex

Instructions

Label the angle – acute, obtuse, right, or reflex

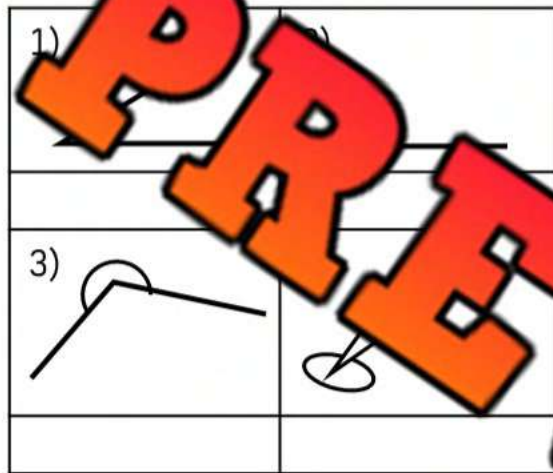
1) 	2) 	3) 	4) 
right acute obtuse reflex	right acute obtuse reflex	right acute obtuse reflex	right acute obtuse reflex
5) 	6) 	7) 	8) 
right acute obtuse reflex	right acute obtuse reflex	right acute obtuse reflex	right acute obtuse reflex
9) 	10) 	11) 	12) 
right acute obtuse reflex	right acute obtuse reflex	right acute obtuse reflex	right acute obtuse reflex
13) 	14) 	15) 	16) 
right acute obtuse reflex	right acute obtuse reflex	right acute obtuse reflex	right acute obtuse reflex

Exit Cards

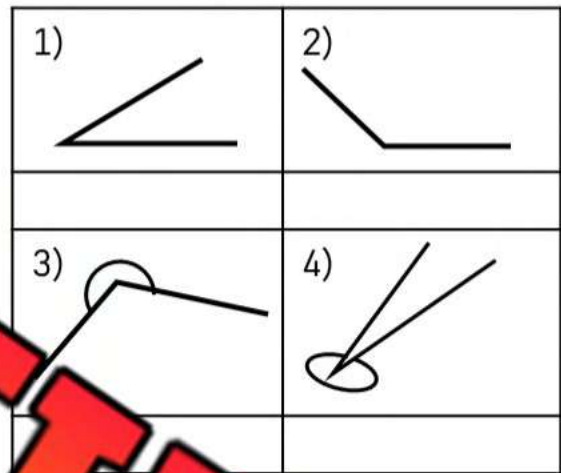
Cut Out

Cut out the exit cards below and have students complete them at the end of class

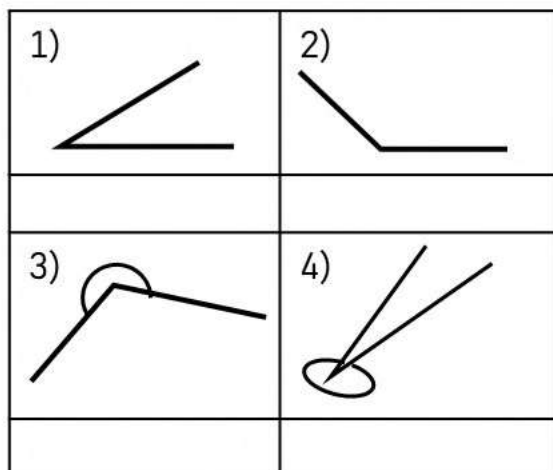
Name: _____

Label the angle – acute, obtuse or reflex

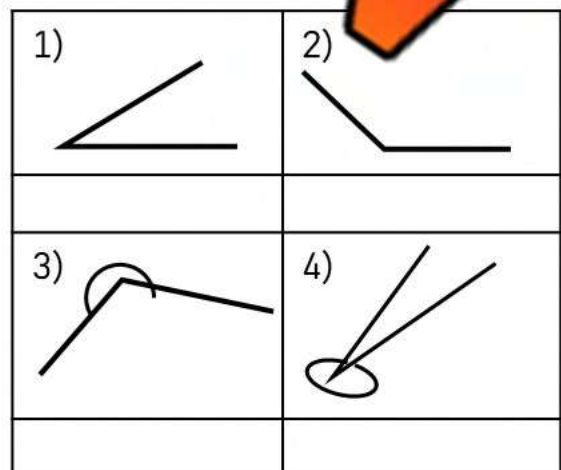
Name: _____

Label the angle – acute, obtuse or reflex

Name: _____

Label the angle – acute, obtuse or reflex

Name: _____

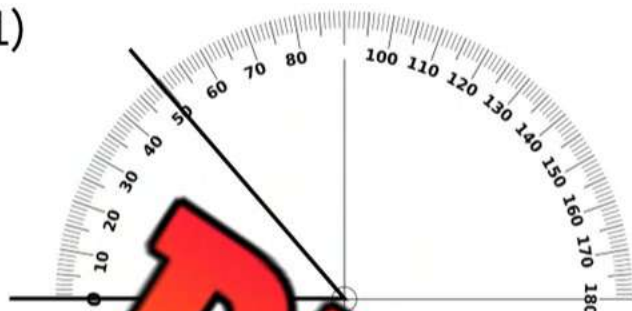
Label the angle – acute, obtuse or reflex

Measuring Angles - Printed Protractor

Instructions

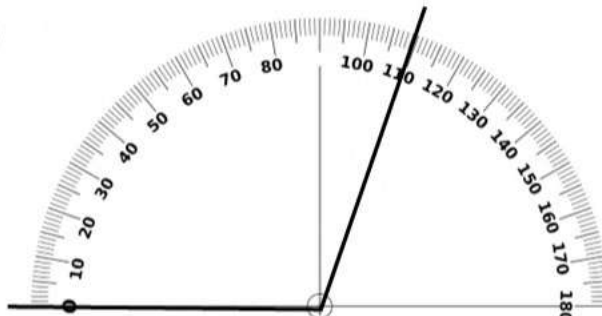
Measure the angles and label them acute, right or obtuse

1)



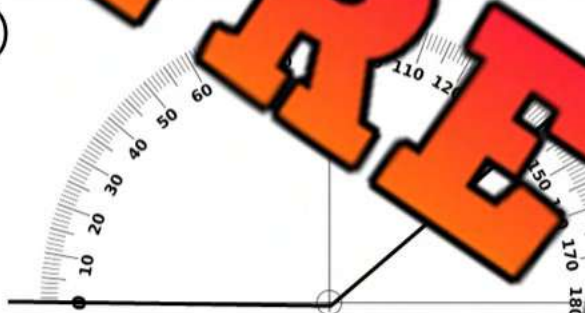
Angle = 45 Type of Angle =

2)



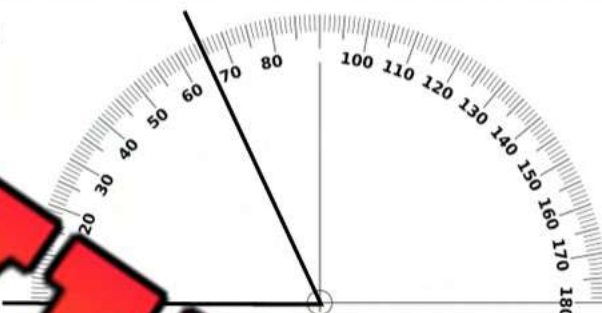
Angle = 135 Type of Angle =

3)



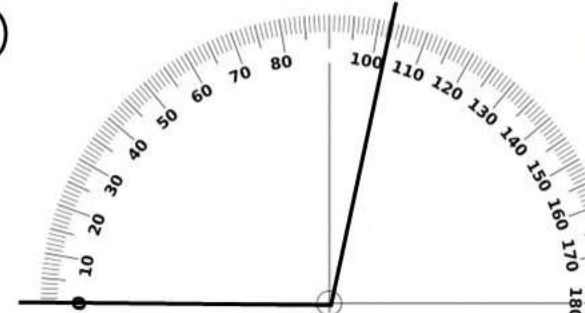
Angle = 110 Type of Angle =

4)



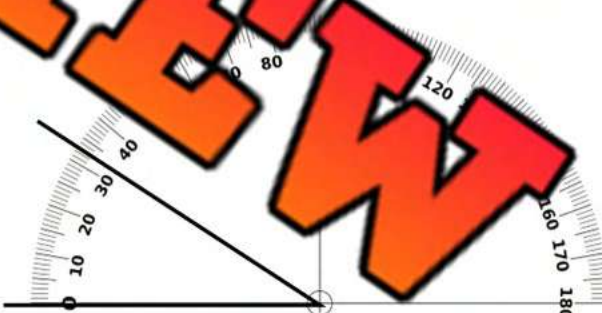
Angle = 75 Type of Angle =

5)



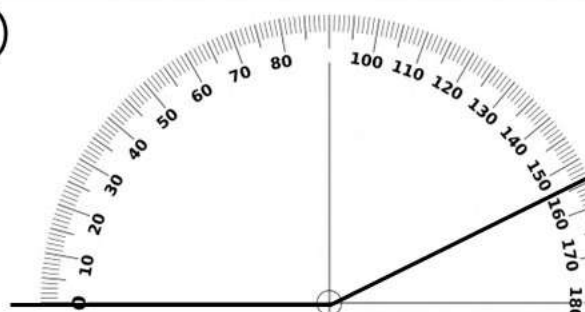
Angle = 100 Type of Angle =

6)



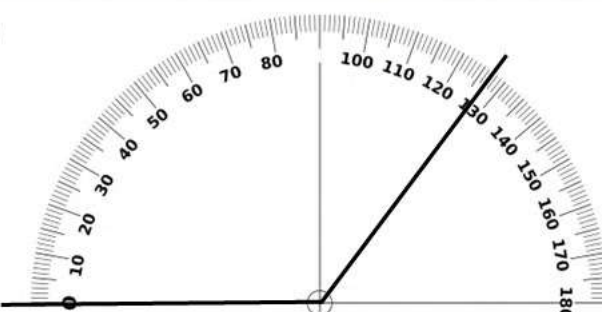
Angle = 30 Type of Angle =

7)



Angle = 150 Type of Angle =

8)



Angle = 120 Type of Angle =

Name: _____

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Curriculum Connection
SS6.1

Measuring Angles Up To 180°

Instructions

Measure the angles and label them acute, right or obtuse

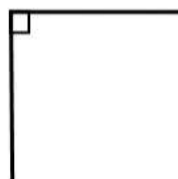
1)



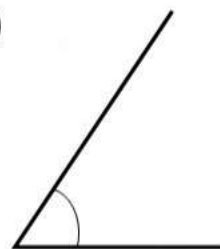
2)



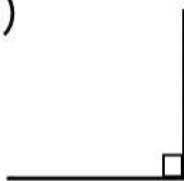
3)



4)



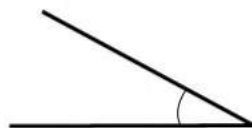
5)



7)



8)



9)



10)



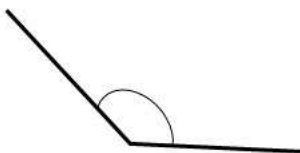
11)



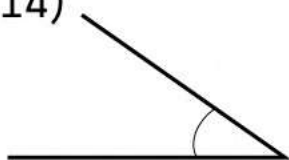
12)



13)



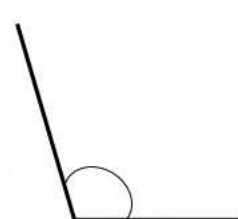
14)



15)



16)



Activity: Angle Hunt

Objective

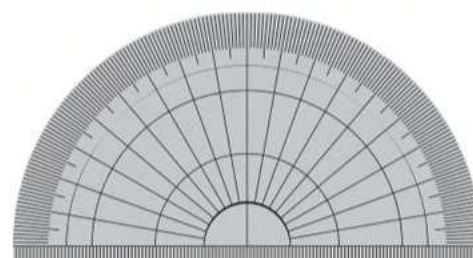
What are we learning about?

Students will learn to measure angles up to 180° and label them as right, obtuse, acute, straight, and reflex through a fun and engaging activity.

Materials

What you will need for the activity.

- Protractors
- Rulers
- Angle Hunt worksheet (provided)
- Coloured pencils or markers



Instructions

How you will complete the activity.

1. Begin by explaining the different types of angles: right, obtuse, acute, straight, and reflex. Show examples of each type using a protractor and ruler.
2. Divide the students into pairs and give each pair a protractor, ruler, and Angle Hunt worksheet.
3. Instruct students to search around the classroom for objects that have angles. They should measure the angles they find using the protractor and ruler, then record their findings on the Angle Hunt worksheet.
4. On the worksheet, students should label each angle they find as right, obtuse, acute, straight, or reflex. They should also draw the angle and write down the degree measurement.
5. Encourage students to use different colored pencils or markers to highlight the different types of angles they find.
6. Once all pairs have completed their Angle Hunt worksheets, gather the class together to review and discuss their findings. Ask each pair to share one example of an angle they found and how they labeled it.

Name: _____

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Curriculum Connection
SS6.1

Instruction

Find and measure an angle that is less than 90° . Draw the angle and label it as acute.

Acute Angle

PREVIEW

Name: _____

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Curriculum Connection
SS6.1

Instruction

Find and measure an angle that is greater than 90° but less than 180° .
Draw the angle and label it as obtuse.

Obtuse Angle

PREVIEW

Name: _____

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Curriculum Connection
SS6.1

Instruction

Find and measure an angle that is greater than 180° . Draw the angle and label it as reflex.

Reflex Angle

PREVIEW

Analyzing Angles – Estimating – Multiple Choice

Instructions

Circle which angle you think it is. Do not use a protractor.

1)

a) $\angle = 15^\circ$ d) $\angle = 1^\circ$

2)

a) $\angle = 95^\circ$ b) $\angle = 100^\circ$ c) $\angle = 80^\circ$ d) $\angle = 120^\circ$

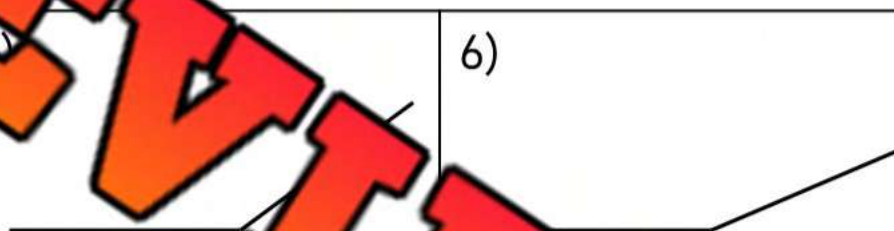
3)

a) $\angle = 168^\circ$ b) $\angle = 50^\circ$ c) $\angle = 120^\circ$ d) $\angle = 12^\circ$

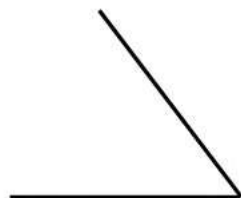
4)

a) $\angle = 74^\circ$ b) $\angle = 170^\circ$ c) $\angle = 30^\circ$ d) $\angle = 106^\circ$

6)

a) $\angle = 37^\circ$ b) $\angle = 30^\circ$ c) $\angle = 143^\circ$ d) $\angle = 170^\circ$ a) $\angle = 50^\circ$ b) $\angle = 157^\circ$ c) $\angle = 120^\circ$ d) $\angle = 10^\circ$

7)

a) $\angle = 95^\circ$ b) $\angle = 54^\circ$ c) $\angle = 110^\circ$ d) $\angle = 160^\circ$

8)

a) $\angle = 60^\circ$ b) $\angle = 120^\circ$ c) $\angle = 10^\circ$ d) $\angle = 160^\circ$

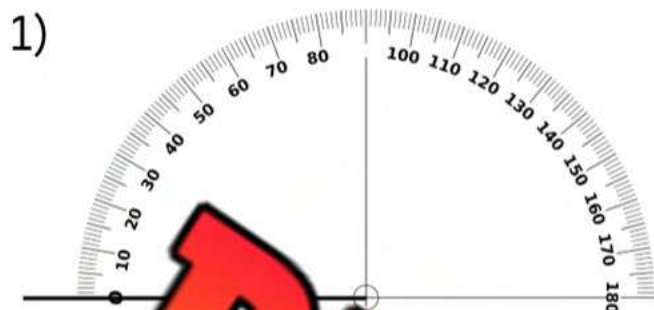
9)

a) $\angle = 171^\circ$ b) $\angle = 9^\circ$ c) $\angle = 50^\circ$ d) $\angle = 85^\circ$

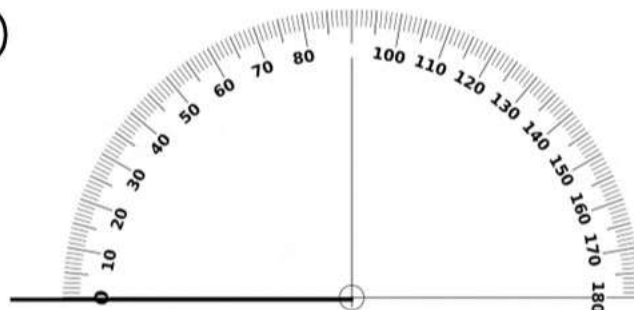
Constructing Angles – Printed Protractor

InstructionsConstruct the angles and label them acute, right or obtuse

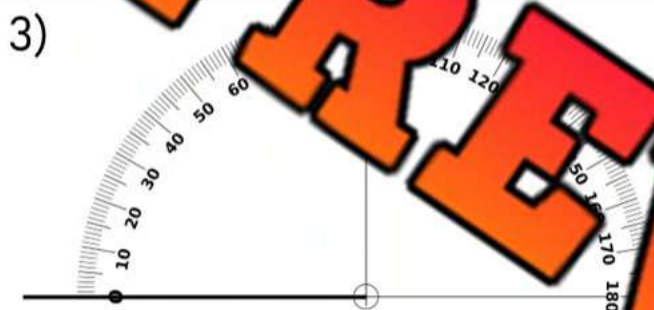
1)

Angle = $\angle$ = _____ Type of Angle = _____

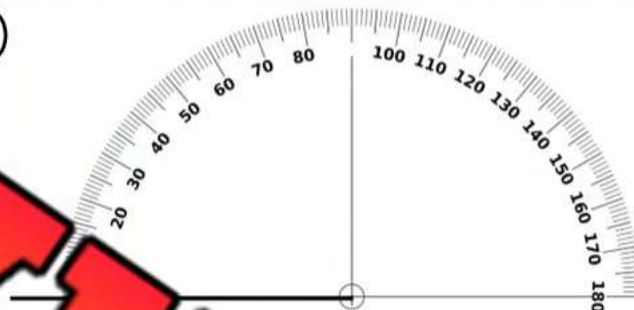
2)

Angle = $\angle$ = 110° Type of Angle = _____

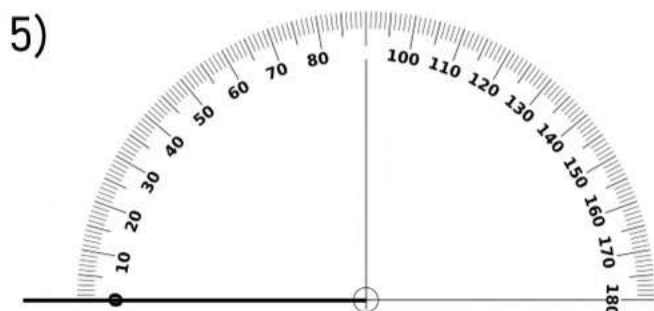
3)

Angle = $\angle$ = 42° Type of Angle = _____

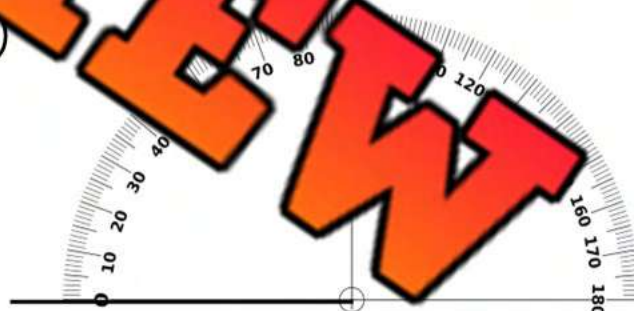
4)

Angle = $\angle$ = 5° Type of Angle = _____

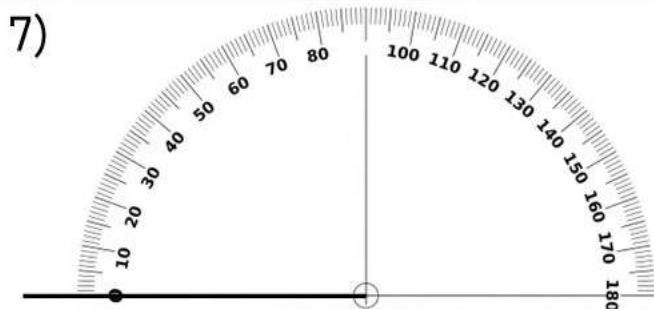
5)

Angle = $\angle$ = 124° Type of Angle = _____

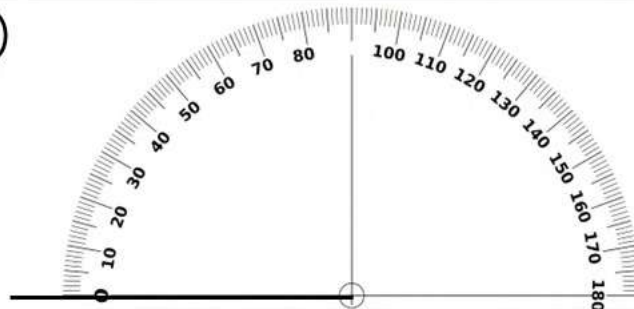
6)

Angle = $\angle$ = 168° Type of Angle = _____

7)

Angle = $\angle$ = 49° Type of Angle = _____

8)

Angle = $\angle$ = 173° Type of Angle = _____

Exit Cards

Cut Out

Cut out the exit cards below and have students complete them at the end of class

Name: _____

Construct the angle and label it.

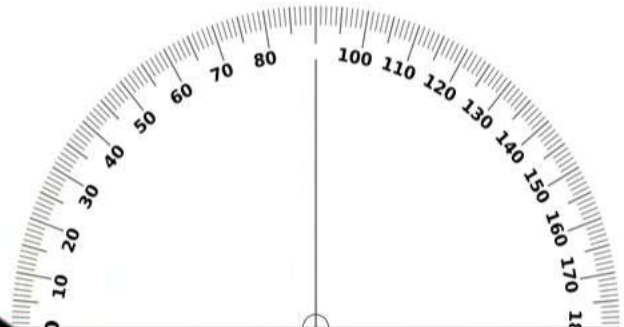


Angle = $\angle = 175^\circ$

Type of Angle = _____

Name: _____

Construct the angle and label it.

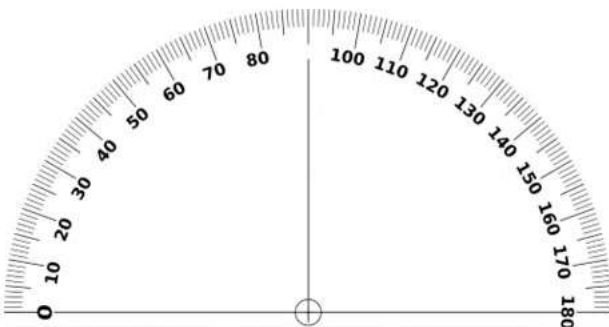


Angle = $\angle = 175^\circ$

Type of Angle = _____

Name: _____

Construct the angle and label it.



Angle = $\angle = 175^\circ$

Type of Angle = _____

Name: _____

Construct the angle and label it.



Angle = $\angle = 175^\circ$

Type of Angle = _____

Name: _____

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Curriculum Connection
SS6.1

Constructing Angles

Part 1 Use a protractor to draw the angles below using the line provided

1)	2)	3)
		
$\angle = 45^\circ$	$\angle = 70^\circ$	$\angle = 120^\circ$

Part 2 Use a protractor to draw the angles below

1)	2)	3)
		
$\angle = 95^\circ$	$\angle = 115^\circ$	$\angle = 45^\circ$

4)	5)	6)
		
$\angle = 60^\circ$	$\angle = 25^\circ$	$\angle = 170^\circ$

Constructing Angles - Estimating

Use your knowledge of obtuse, acute, and right angles to help you estimate the angle measurements below. You can also use these angles to assist you with your estimations.

 45° 90° 140° 180° 

Part 1 Draw the angles below using the line provided without a protractor

1)

 $\angle = 50^\circ$

3)

 $\angle = 130^\circ$

Part 2

Draw the angles below without a protractor

1)

 $\angle = 80^\circ$

2)

 $\angle = 70^\circ$ $\angle = 165^\circ$

4)

 $\angle = 120^\circ$

5)

 $\angle = 30^\circ$

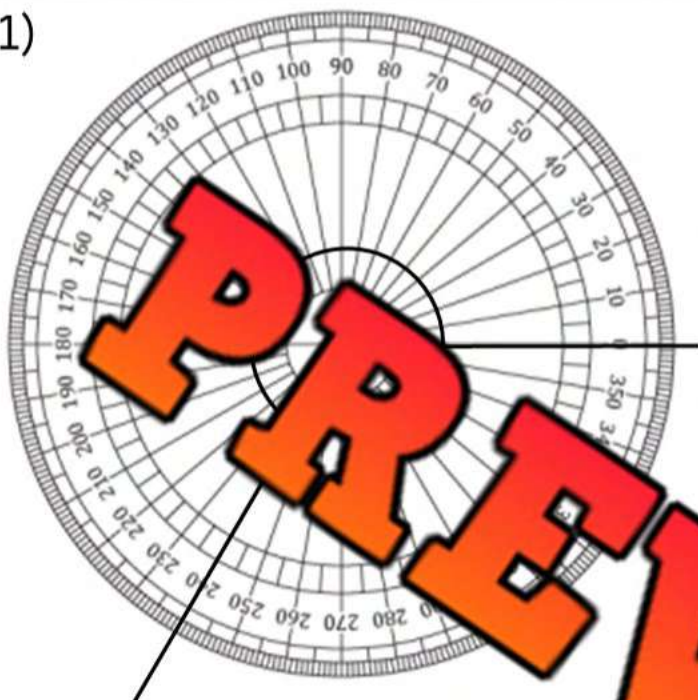
6)

 $\angle = 140^\circ$

Using Printed Protractor – Angles Up To 360°**Instructions**

Measure the angles below using the circular protractor

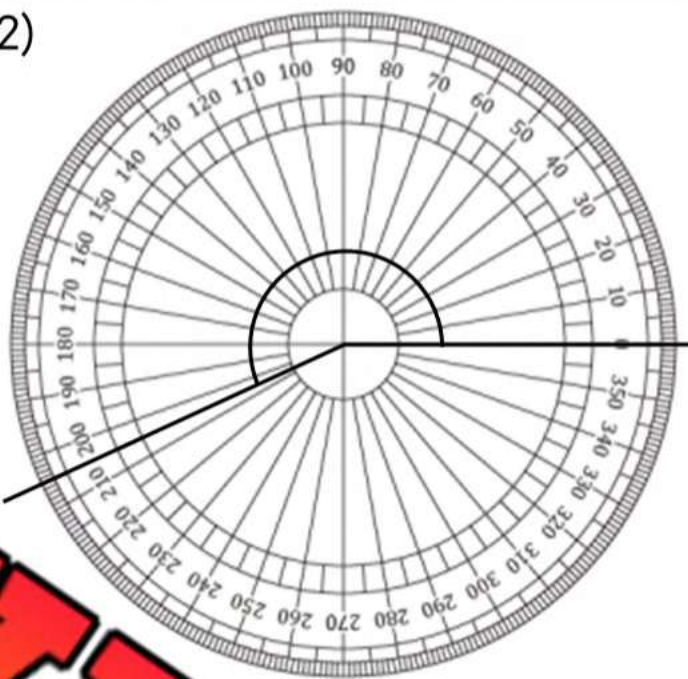
1)



Angle =

Type of Angle =

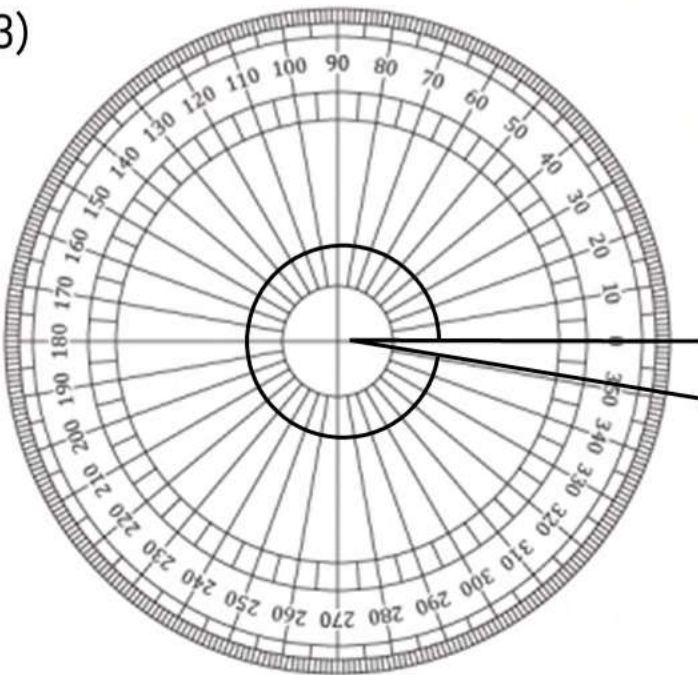
2)



Angle =

Type of Angle =

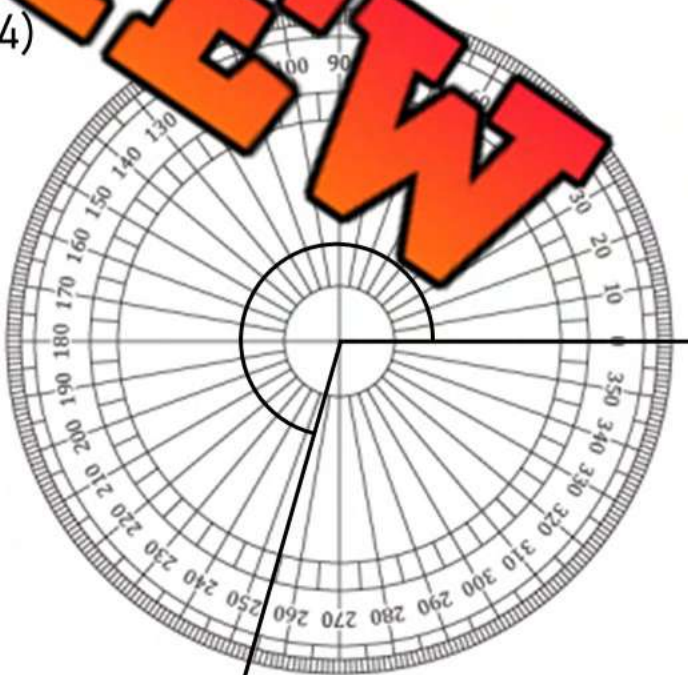
3)



Angle =

Type of Angle =

4)



Angle =

Type of Angle =

Measuring Angles Up To 360°

We can measure reflex angles that are larger than 180° by using a circular protractor or a semi-circular protractor.

When using a semi-circular protractor, you can use one of two strategies:

- 1) Measure the angle starting with 180° and add 180°
- 2) Measure the remaining angle from 0° and subtract 360°

Solution

Strategy 1

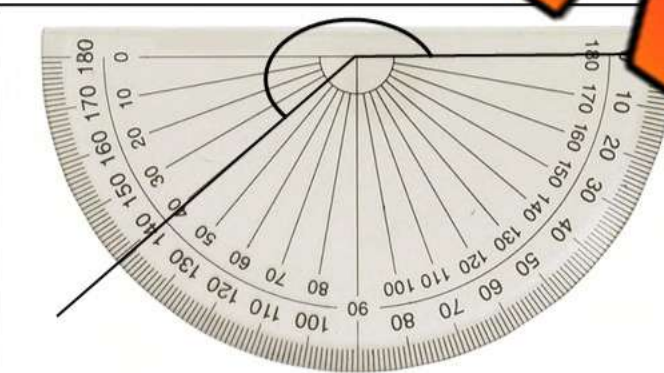
$$180 + 100 = 280$$

Strategy 2

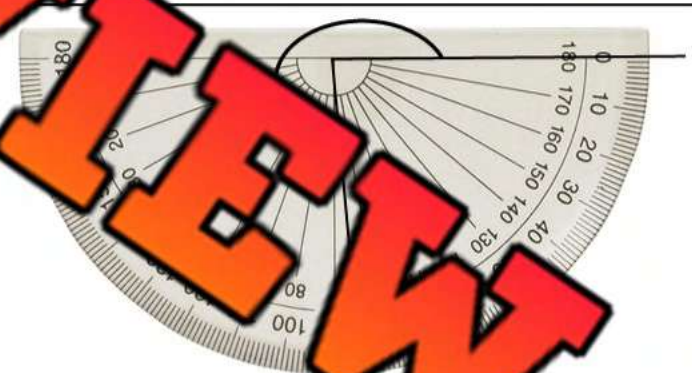
$$360 - 80 = 280$$

Instructions

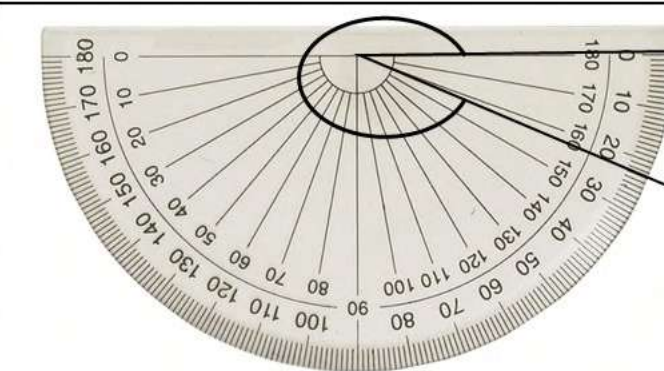
Measuring Reflex Angles



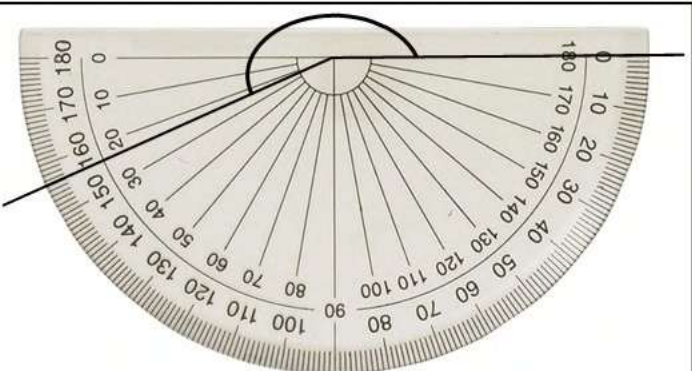
1) Angle Size =



2) Angle Size =



3) Angle Size =



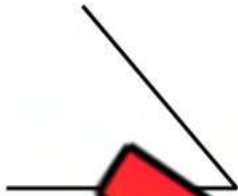
4) Angle Size =

Constructing Angles - Estimating – Multiple Choice

Instructions

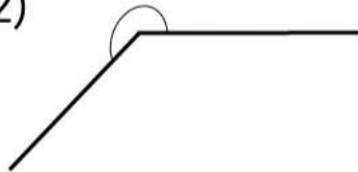
Circle which angle you think it is. Do not use a protractor

1)



- a) $\angle = 90^\circ$
 b) $\angle = 11^\circ$
 c) $\angle = 11^\circ$
 d) $\angle = 1^\circ$

2)



- a) $\angle = 95^\circ$
 b) $\angle = 100^\circ$
 c) $\angle = 225^\circ$
 d) $\angle = 290^\circ$

3)



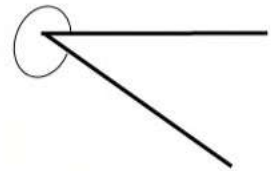
- a) $\angle = 171^\circ$
 b) $\angle = 9^\circ$
 c) $\angle = 50^\circ$
 d) $\angle = 85^\circ$

4)



- a) $\angle = 168^\circ$
 b) $\angle = 50^\circ$
 c) $\angle = 120^\circ$
 d) $\angle = 10^\circ$

6)



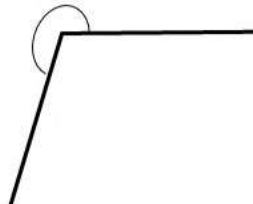
- a) $\angle = 60^\circ$
 b) $\angle = 120^\circ$
 c) $\angle = 10^\circ$
 d) $\angle = 160^\circ$

7)



- a) $\angle = 50^\circ$
 b) $\angle = 160^\circ$
 c) $\angle = 20^\circ$
 d) $\angle = 100^\circ$

8)



- a) $\angle = 75^\circ$
 b) $\angle = 190^\circ$
 c) $\angle = 255^\circ$
 d) $\angle = 355^\circ$

9)



- a) $\angle = 40^\circ$
 b) $\angle = 30^\circ$
 c) $\angle = 140^\circ$
 d) $\angle = 170^\circ$

Name: _____

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Curriculum Connection
SS6.1

Measuring Angles Up To 360°

Instructions

Measure the angles below

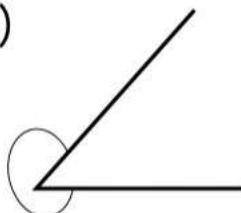
1)



2)



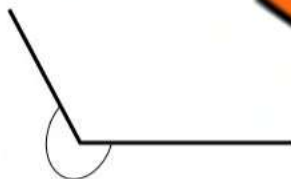
3)



4)



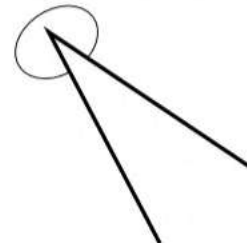
5)



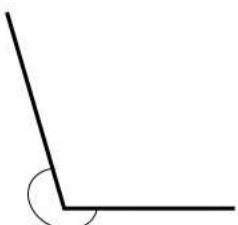
7)



8)



9)



10)



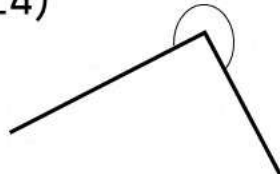
11)



13)



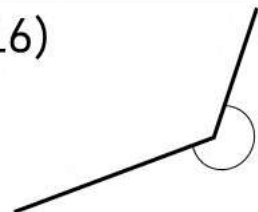
14)



15)



16)

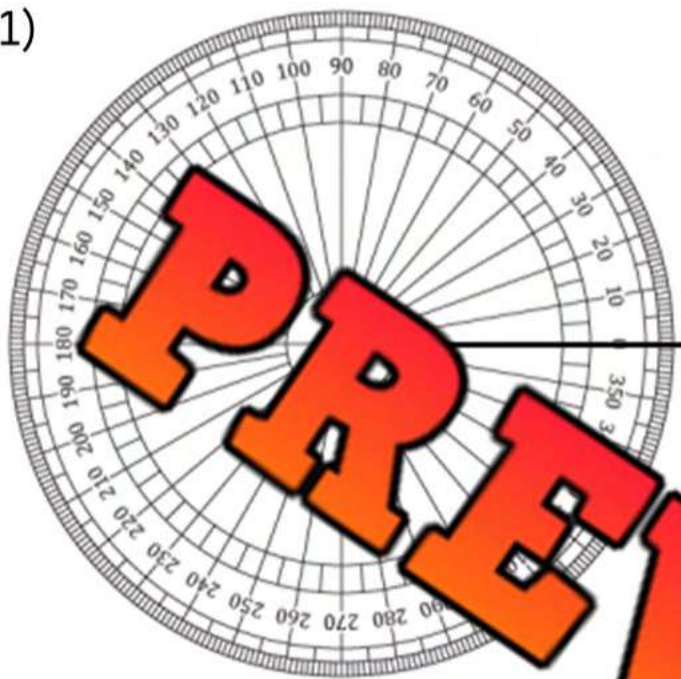


Constructing Angles Up To 360°

Instructions

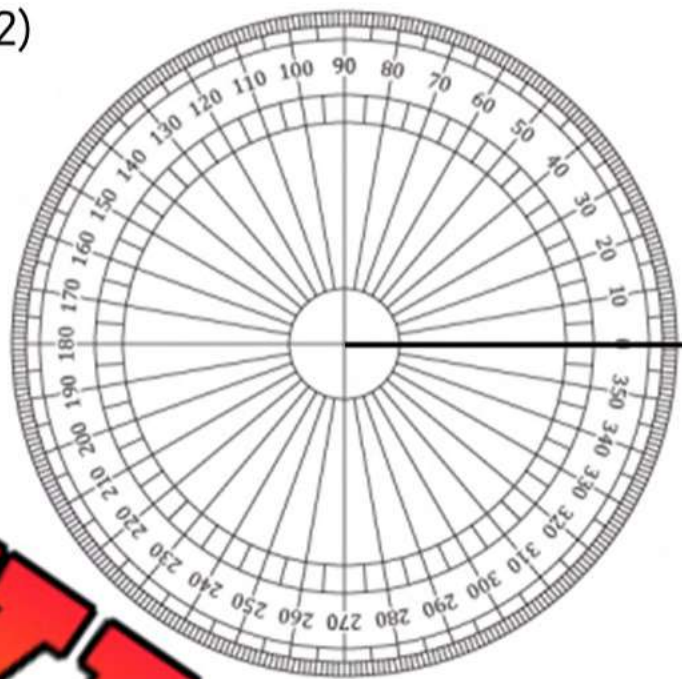
Construct the angles below

1)



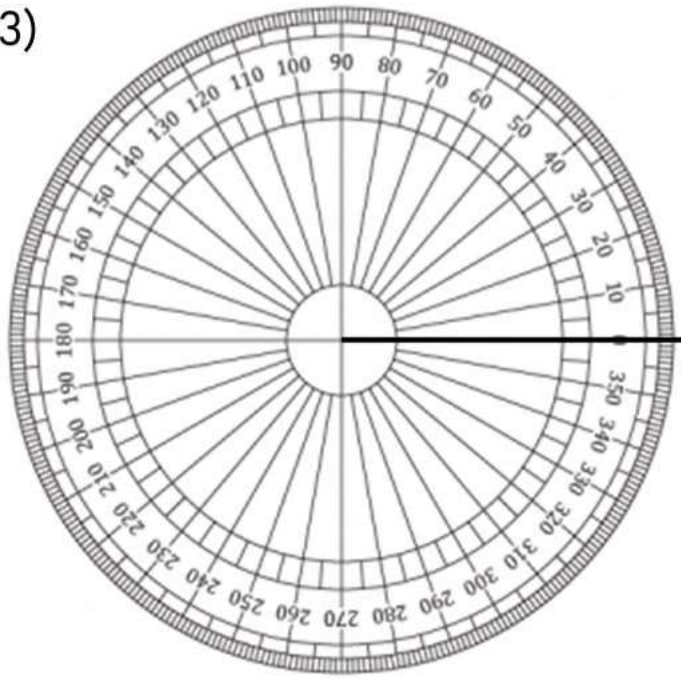
Angle = 195°

2)



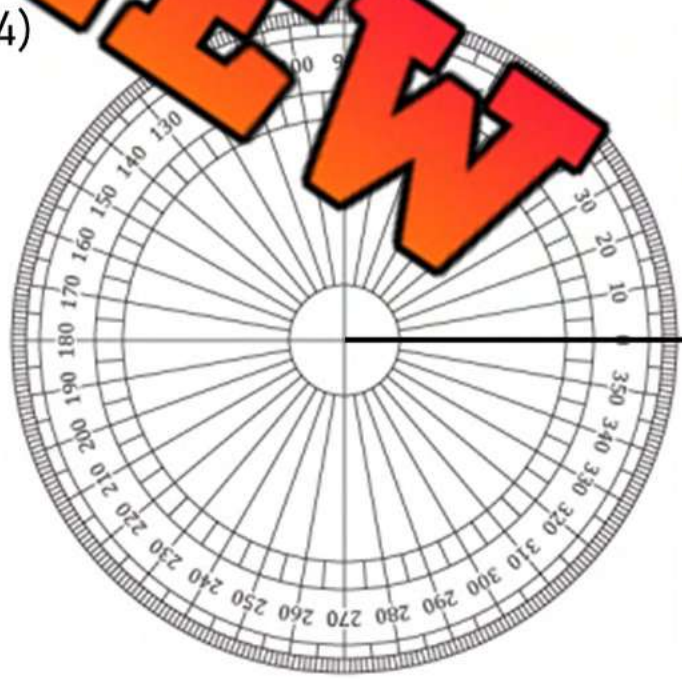
Angle = 292°

3)



Angle = 347°

4)



Angle = 262°

Name: _____

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Curriculum Connection
SS6.1

Constructing Angles Up To 360°

Part 1

Use a protractor to draw the angles below using the line provided

1)

 $\angle = 20^\circ$

2)

 $\angle = 275^\circ$

3)

 $\angle = 350^\circ$

Part 2

Use a protractor to draw the angles below

1)

 $\angle = 287^\circ$

2)

 $\angle = 322^\circ$

3)

 $\angle = 300^\circ$

4)

 $\angle = 248^\circ$

5)

 $\angle = 318^\circ$

6)

 $\angle = 264^\circ$

Exit Cards

Cut Out

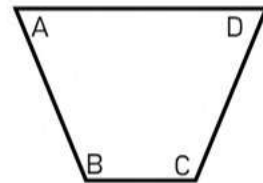
Cut out the exit cards below and have students complete them at the end of class

Name: _____

Measure the angles and label the quadrilateral.

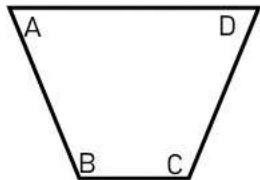
$\angle A =$
$\angle B =$
$\angle C =$
$\angle D =$

Name: _____

Measure the angles and label the quadrilateral.

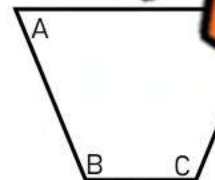
$\angle A =$
$\angle B =$
$\angle C =$
$\angle D =$

Name: _____

Measure the angles and label the quadrilateral.

$\angle A =$
$\angle B =$
$\angle C =$
$\angle D =$

Name: _____

Measure the angles and label the quadrilateral.

$\angle A =$
$\angle B =$
$\angle C =$
$\angle D =$

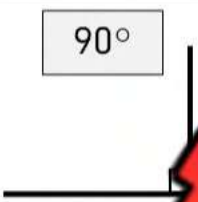
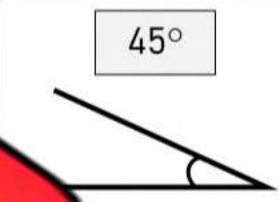
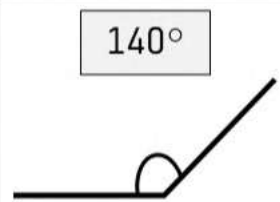
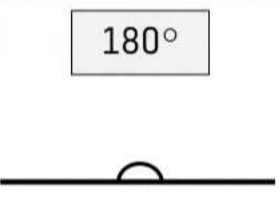
Name: _____

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Constructing Angles - Estimating

Use your knowledge of obtuse, acute, right, and reflex angles to help you estimate the angle measurements below. You can also use these angles to assist you with your estimations.

Right Angle	Acute Angle	Obtuse Angle	Straight Angle	Reflex Angle
90° 	45° 	140° 	180° 	250° 

Part 1 Draw the angles below using the line provided

1) 	3) 	4) 
$\angle = 75^\circ$	$\angle = 35^\circ$	$\angle = 220^\circ$

Part 2 Draw the angles below

1) 	2) 	3) 	 
$\angle = 30^\circ$	$\angle = 110^\circ$	$\angle = 280^\circ$	$\angle = 350^\circ$
5) 	6) 	7) 	8) 
$\angle = 210^\circ$	$\angle = 310^\circ$	$\angle = 60^\circ$	$\angle = 130^\circ$

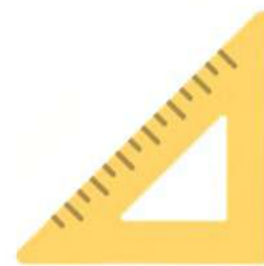
Measuring Angles



Acute Triangle – All angles are acute

Obtuse Triangle – One angle is obtuse

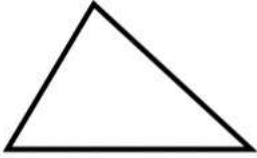
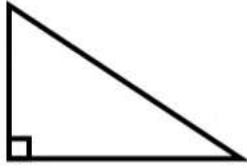
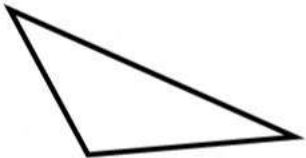
Right Triangle – One right angle



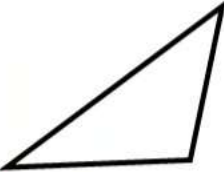
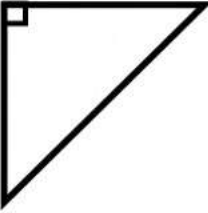
Instruction Measure the angles and label the triangles: Acute, Obtuse, or Right

1)	3)	4)
$\angle A =$	$\angle A =$	$\angle A =$
$\angle B =$	$\angle B =$	$\angle B =$
$\angle C =$	$\angle C =$	$\angle C =$
Obtuse Triangle		
5)	6)	7)
$\angle A =$	$\angle A =$	$\angle A =$
$\angle B =$	$\angle B =$	$\angle B =$
$\angle C =$	$\angle C =$	$\angle C =$

Acute, Obtuse, and Right Triangles

Acute Triangle	Right Triangle	Obtuse Triangle
		
All Angles Are Less Than 90°	1 Angle Is 90°	1 Angle Is Greater Than 90°

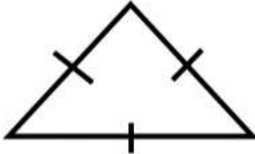
Part 1 Draw the angles below using the line provided

1) 	3) 	4) 
5) 	6) 	7) 
8) 		

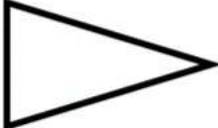
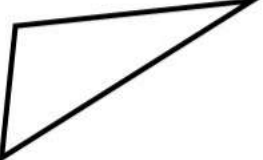
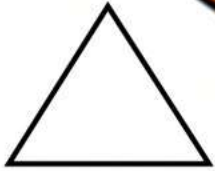
Part 2 Draw the angles below

9)	10)	11)
Acute Triangle	Obtuse Triangle	Right Triangle

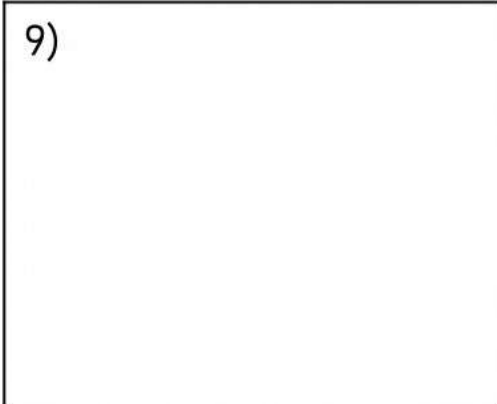
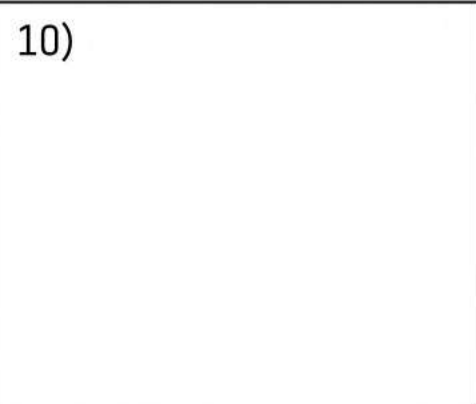
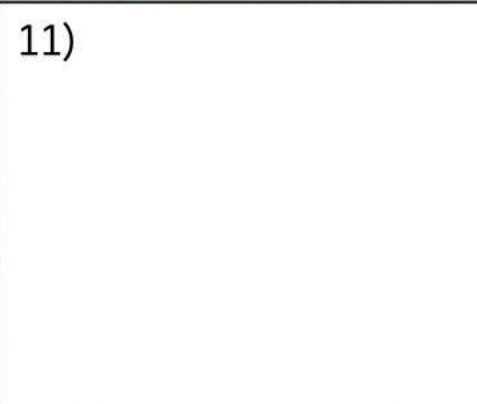
Types of Triangles – Equilateral, Scalene, Isosceles

Equilateral Triangle	Isosceles Triangle	Scalene Triangle
		
3 Equal Sides 3 Equal Angles	2 Equal Sides 2 Equal Angles	No Equal Sides No Equal Angles

Part 1 Identify the triangles equilateral, isosceles, or scalene

1) 	3) 	4) 
5) 	6) 	7) 
8) 		

Part 2 Draw a picture of the three different types of triangles

9)	10)	11)
		
Equilateral Triangle	Isosceles Triangle	Scalene Triangle

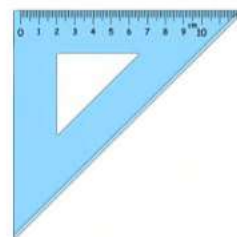
Measuring Angles



Equilateral Triangle – All sides lengths are equal

Isosceles Triangle – Two side lengths are equal

Scalene Triangle – All three side lengths are different

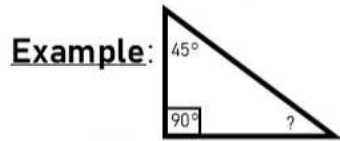


Instructions Measure the angles and label the triangles equilateral, isosceles, or scalene

1)		3)		4)	
$\angle A =$		$\angle A =$		$\angle A =$	
$\angle B =$		$\angle B =$		$\angle B =$	
$\angle C =$		$\angle C =$			
Scalene					
5)		6)		7)	
$\angle A =$		$\angle A =$		$\angle A =$	
$\angle B =$		$\angle B =$		$\angle B =$	
$\angle C =$		$\angle C =$		$\angle C =$	
8)					
$\angle A =$					
$\angle B =$					
$\angle C =$					

Finding Missing Angles In Triangles

When we add up all the angles inside a triangle, they will always add up to 180. Therefore, we can use this information to determine the missing angle inside a triangle.



Solution: $90 + 45 + ? = 180$

$135 + ? = 180$

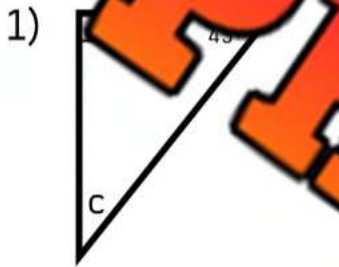
$135 + \boxed{45} = 180$

or $180 - 90 - 45 = \boxed{45}$

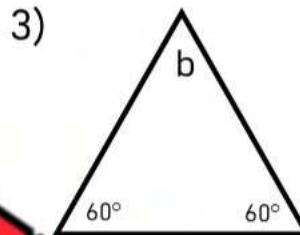
therefore, the missing angle is 45°

Part 1

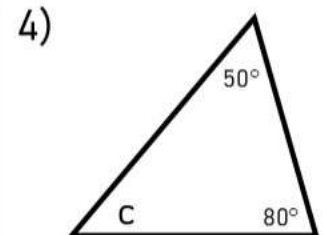
Find the missing angle in the triangles below



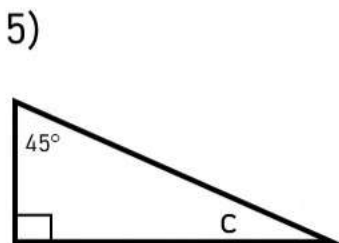
c =



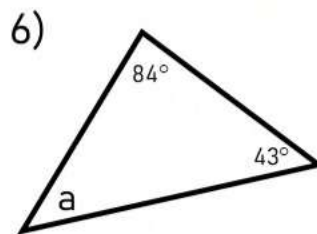
b =



c =



c =



a =



b =

c =

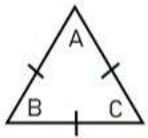
Part 2

Draw the triangle below and find the missing angle

Two of the angles in the triangle are acute, measuring at 35° . What is the measurement of the third angle? What type of angle is it?

Interior Angles - Triangles

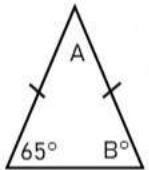
Interior angles are the angles inside a shape. The interior angles of a triangle will always equal 180° . We can use this information to solve for unknown angle measurements.



All angles are the same. Therefore, all angles = 60°

$$60 + 60 + 60 = 180$$

Equilateral Triangle

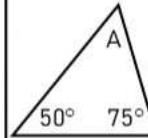


Two angles are the same. Therefore, angle A = 50°

$$65 + 65 + A = 180$$

$$A = 50^\circ$$

Isosceles Triangle



All angles are different. Therefore, angle A = 55°

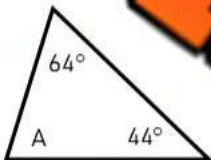
$$50 + 75 + A = 180$$

$$A = 55^\circ$$

Scalene Triangle

Instructions: Use the information to solve for the values of the unknown angle measurements

1)



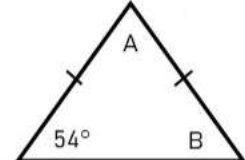
A =

2)



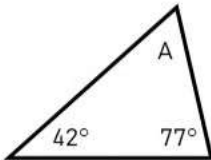
A =

3)



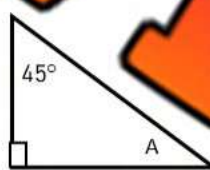
A =

4)



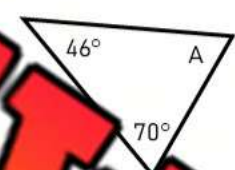
A =

5)



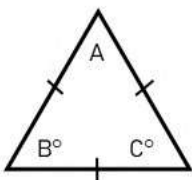
A =

6)



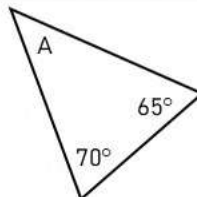
A =

7)



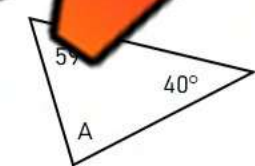
A =

8)



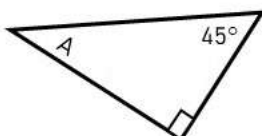
A =

9)



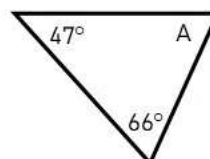
A =

10)



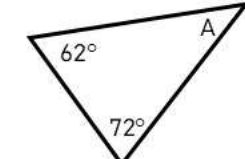
A =

11)



A =

12)



A =

Interior Angles - Triangles - Word Problems

- 1) An isosceles triangle has two different angle measurements. Angle AB and AC are both 75° . What is the angle measurement of BC?

- 2) A scalene triangle has angles of 66° and 72° . What is the third angle?

- 3) Liam cuts a pizza into triangular pieces. He cuts 8 slices into equal sizes. The slices are isosceles triangles with two angles of 52° . What is the third angle measurement?



- 4) Can an equilateral triangle have an angle size of 50° ? Explain why or why not.

- 5) a) If two angles in a triangle equal 141° , what is the value of the third angle?

- b) Assuming all three angles are whole numbers, what type of triangle is it?

- 6) Sammy folds a paper into a right triangle for a paper airplane. One of the angles is 50° . What are the other two angles?



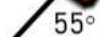
Exit Cards

Cut Out

Cut out the exit cards below and have students complete them at the end of class

Name: _____

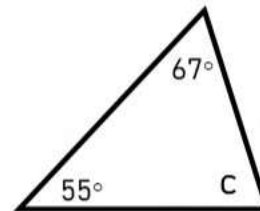
- 1) Find the missing angle in the triangles below


55°

- 2) Maria cuts a cake into 10 equal slices. Each isosceles triangle slice has two angles of 35°. What is the third angle?
- _____

Name: _____

- 1) Find the missing angle in the triangles below

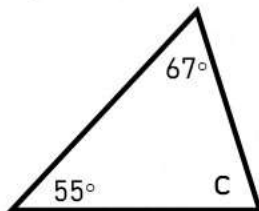


C = _____

- 2) Maria cuts a cake into 10 equal slices. Each isosceles triangle slice has two angles of 35°. What is the third angle?
- _____

Name: _____

- 1) Find the missing angle in the triangles below

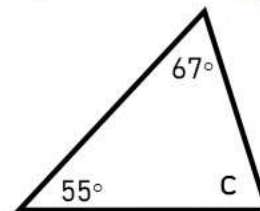


C = _____

- 2) Maria cuts a cake into 10 equal slices. Each isosceles triangle slice has two angles of 35°. What is the third angle?
- _____

Name: _____

- 1) Find the missing angle in the triangles below

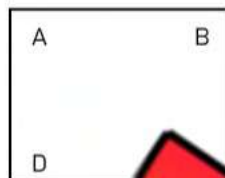


C = _____

- 2) Maria cuts a cake into 10 equal slices. Each isosceles triangle slice has two angles of 35°. What is the third angle?
- _____

Interior Angles - Quadrilaterals

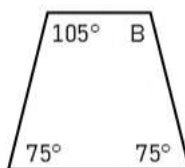
Interior angles are the angles inside a shape. The interior angles of a quadrilateral will always equal 360° . We can use this information to solve for unknown angle measurements.



A rectangle has 4 equal angles that are 90° .

$$\underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad} = 360$$

$$90 + 90 + 90 + 90 = 360$$



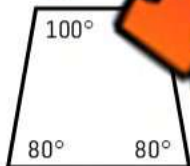
The trapezoid has 2 pairs of equal angles.

$$\underline{75} + \underline{75} + \underline{105} + \underline{B} = 360$$

$$B = \underline{105}$$

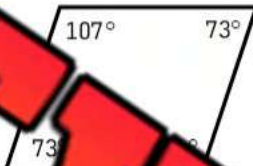
Instructions: Find the values of the unknown angle measurements

1)



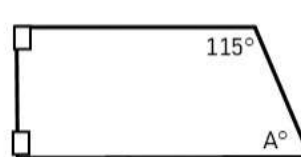
A =

2)



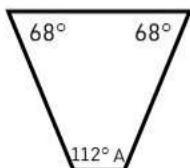
A =

3)



A =

4)



A =

5)



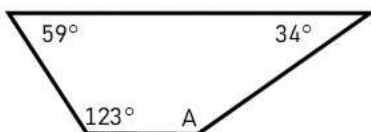
A =

6)



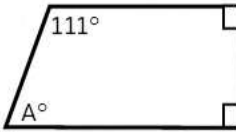
A =

7)



A =

8)



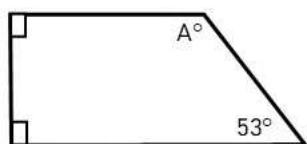
A =

9)



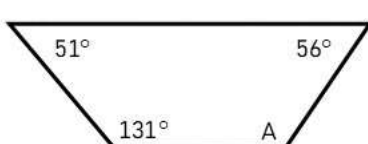
A =

10)



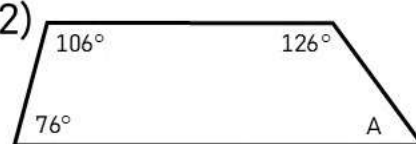
A =

11)



A =

12)



A =

Escape Room Math: Angle Adventures

Objective

What are we learning about?

Students will practice measuring and calculating the interior angles of quadrilaterals and triangles through a fun and interactive escape room game, enhancing their geometric skills and problem-solving abilities.

Materials

What you will need for the activity.

- Index cards
- Envelopes (for index cards)
- Small locks and keys (or combination locks)
- Boxes or small containers (for locks and keys)
- Markers or pens
- Timer (optional)



Instructions

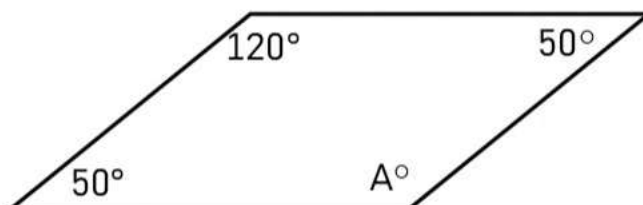
How you will complete the activity.

1. Prepare a series of math problems involving measuring and calculating the interior angles of quadrilaterals and triangles. Write each problem on a separate index card and place each card in an envelope.
2. Set up the classroom as an "escape room" with different stations. Each station will have a box or container with a lock, containing the next problem to solve.
3. Divide the students into small groups. Explain that they must solve the angle problems to find the keys or combinations to escape the room.
4. Give each group the first envelope with the initial problem. Once they solve the problem and measure or calculate the angles correctly, they will receive a key or combination to unlock the next box (they can come to you for verification or have a student helper).
5. Each group will move from station to station, solving problems and collecting keys or combinations. Use small locks and keys or combination locks to add a layer of challenge.
6. The first group to solve all the problems and "escape" from the room wins the game.

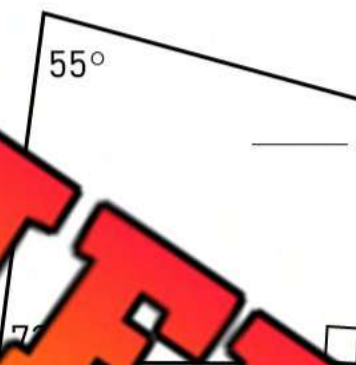
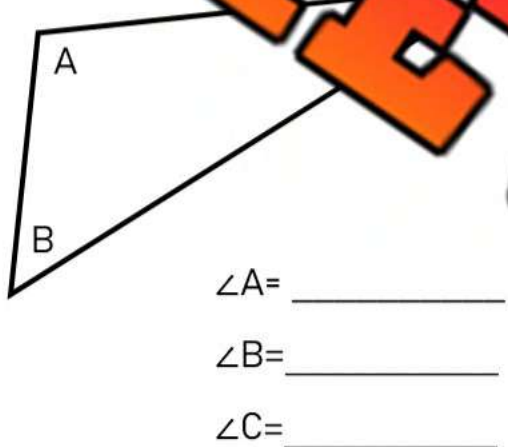
Math Cards

Cut out the math cards below

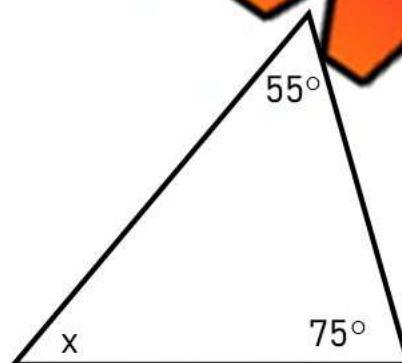
A quadrilateral has interior angles of 90° , 85° , and 95° . Calculate the fourth angle.



$$A = \underline{\hspace{2cm}}$$



Measure the angles of a triangle with one angle of 80° and another angle of 70° .

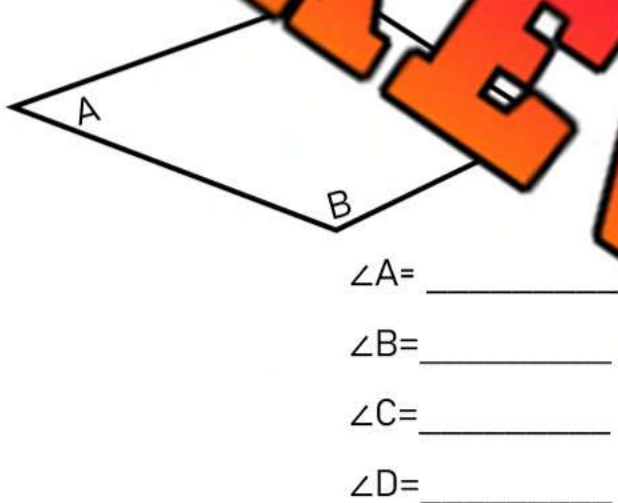


$$X = \underline{\hspace{2cm}}$$

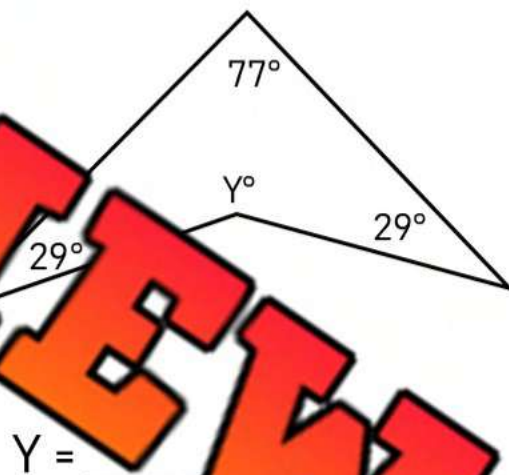
Math Cards

Cut out the math cards below

An isosceles triangle has one angle measuring 80° . What are the measurements of the other two angles if the remaining two angles are equal?



Measure the angles of a triangle with one angle of 50° and another angle of 60° .



A quadrilateral has one right angle and two angles of 110° . Calculate the fourth angle.

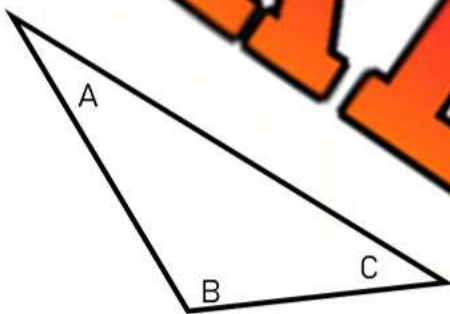
In a scalene triangle, one angle measures 35° and another angle measures 95° . What is the measurement of the third angle?

Math Cards

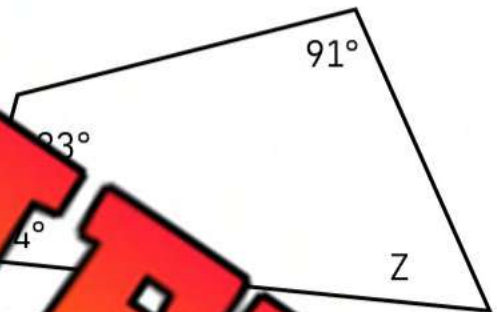
Cut out the math cards below

A carpenter is constructing a triangular frame. Two of the angles in the triangle measure 45° and 90° . What is the measurement of the third angle?

PREVIEW

 $\angle A =$ _____ $\angle B =$ _____ $\angle C =$ _____

In a kite, two of the angles measure 65° and 115° . What are the measurements of the other two angles if they are equal?

 $Z =$ _____

An architect is designing a triangular window with two equal angles measuring 50° . What is the measurement of the third angle in the window?

In a trapezoid, two of the angles measure 70° and 110° . If the other two angles are equal, what are their measurements?

Exit Cards

Cut Out

Cut out the exit cards below and have students complete them at the end of class

Name: _____

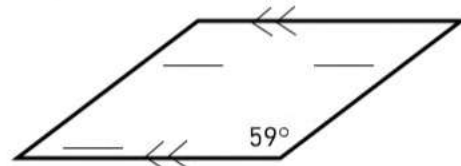
1) Find the values of the unknown angle measurements.



2) A trapezoid has angles of 80° , 100° , and 60° . What is the measurement of the fourth angle?

Name: _____

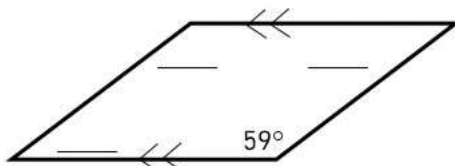
1) Find the values of the unknown angle measurements.



2) A trapezoid has angles of 80° , 100° , and 60° . What is the measurement of the fourth angle?

Name: _____

1) Find the values of the unknown angle measurements.



2) A trapezoid has angles of 80° , 100° , and 60° . What is the measurement of the fourth angle?

Name: _____

1) Find the values of the unknown angle measurements.



2) A trapezoid has angles of 80° , 100° , and 60° . What is the measurement of the fourth angle?

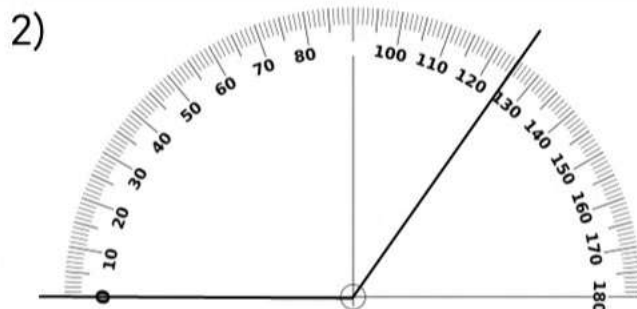
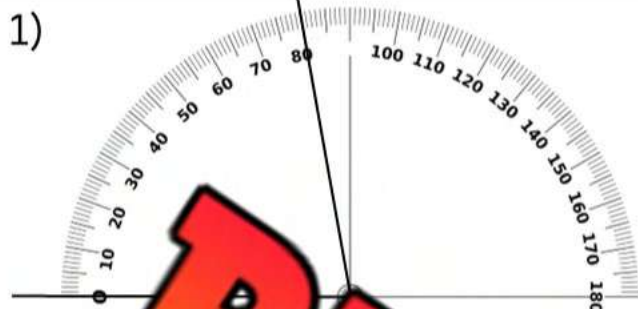
Name: _____

70

Curriculum Connection
TQ

Angles - Unit Quiz

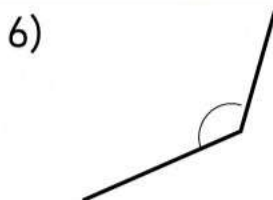
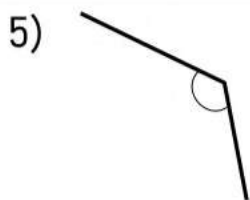
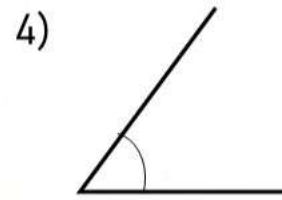
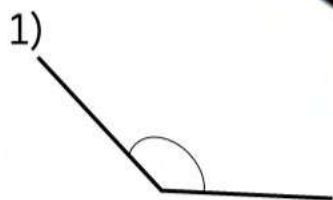
Part 1 Measure the angles and label them acute, right or obtuse



Angle = Type of Angle =

Angle = Type of Angle =

Part 2 Measure the angles and label them acute, right, or obtuse



Part 3 Use a protractor to draw the angles below using the line provided

 $\angle = 60^\circ$  $\angle = 98^\circ$  $\angle = 147^\circ$

Part 4

Use a protractor to draw the angles below

1)

2)

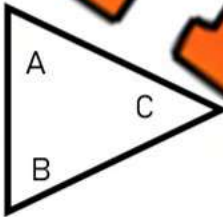
3)

 27° $\angle = 93^\circ$ $\angle = 145^\circ$

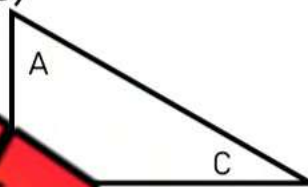
Part 5

Find the angles and label the triangles acute, obtuse, or right

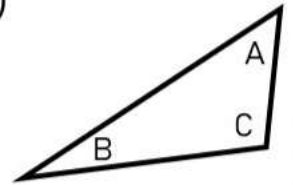
1)



3)



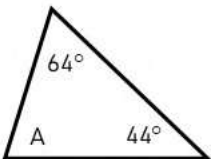
4)

 $\angle A =$ $\angle A =$ $\angle A =$ $\angle A =$ $\angle B =$ $\angle B =$ $\angle B =$ $\angle B =$ $\angle C =$ $\angle C =$ $\angle C =$ $\angle C =$

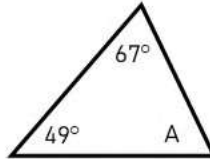
Part 6

Find the values of the unknown angle measurement

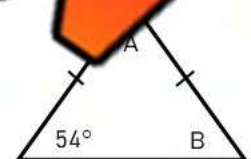
1)



2)



3)

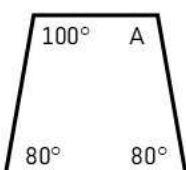


A =

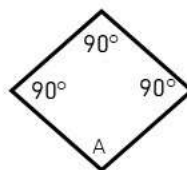
A =

A =

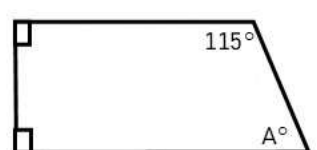
4)



5)



6)



A =

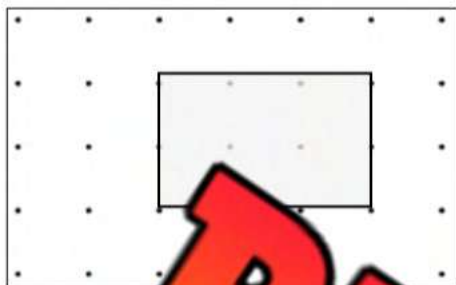
A =

A =

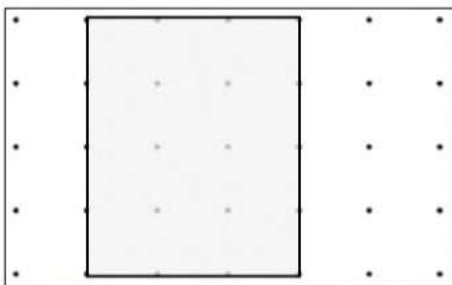
Perimeter of Regular and Irregular Polygons

Part 1

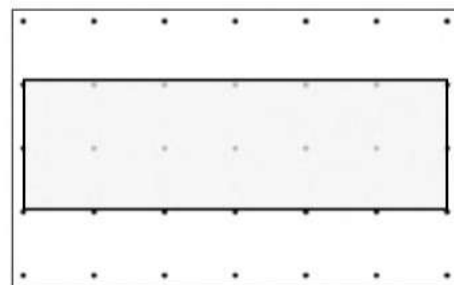
Find the perimeter of the rectangles below



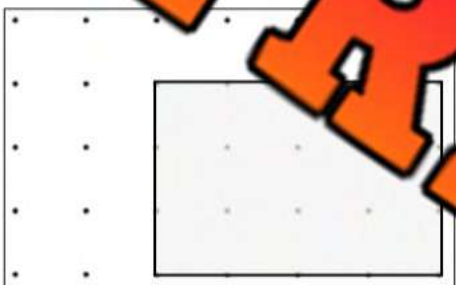
1) Perimeter= _____



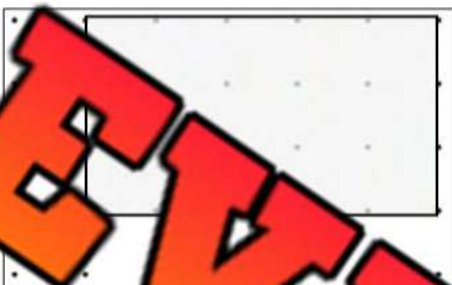
2) Perimeter= _____



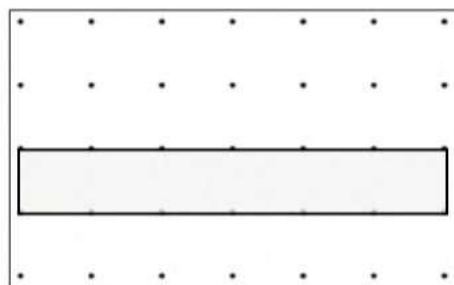
3) Perimeter= _____



4) Perimeter= _____



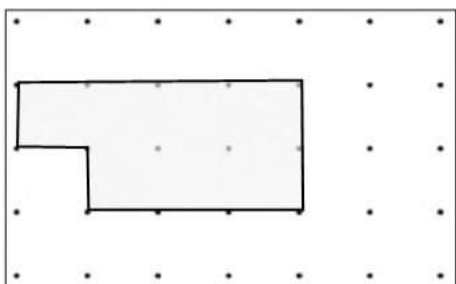
5) Perimeter= _____



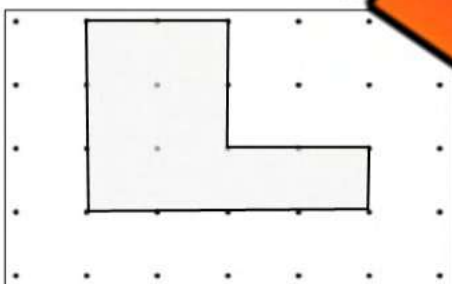
6) Perimeter= _____

Part 2

Find the perimeter of the polygons below



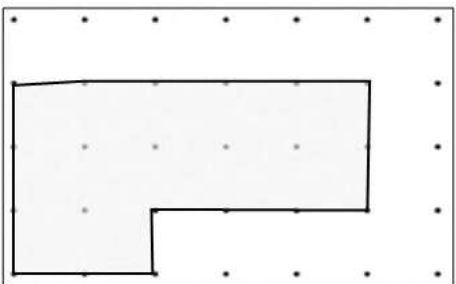
1) Perimeter= _____



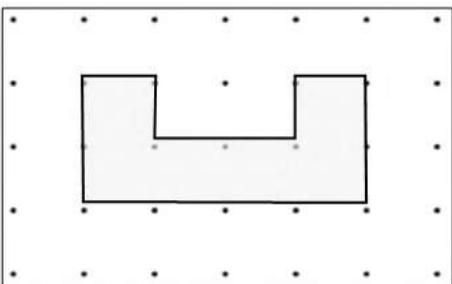
2) Perimeter= _____



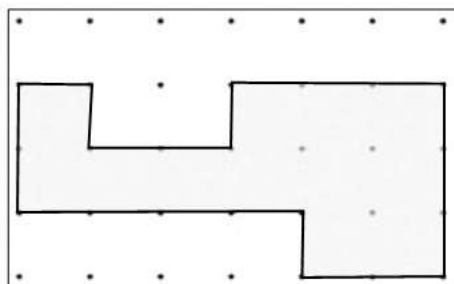
3) Perimeter= _____



4) Perimeter= _____



5) Perimeter= _____



6) Perimeter= _____

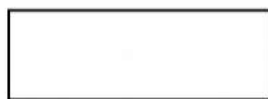
Perimeter Formulas

Mathematicians use formulas to help them solve questions faster and easier. When finding the perimeter of a quadrilateral, we can use the following formulas.

Formula 1

$$a + b + a + b$$

$$9 + 3 + 9 + 3 = 24\text{cm}$$



9cm

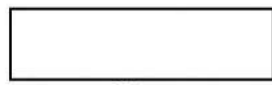
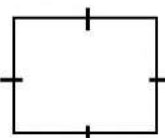
3cm

Formula 2

$$(a + b) \times 2$$

$$(9 + 3) \times 2 = 24\text{cm}$$

Instruction: Use both formulas to calculate the perimeter of the quadrilaterals

Shape	Formula 1	Formula 2
1)  5cm		
2)  11cm 5cm		
3)  15m 7m		
4)  22mm 14mm		
5)  17cm 4cm		
6)  7cm		

Name: _____

75

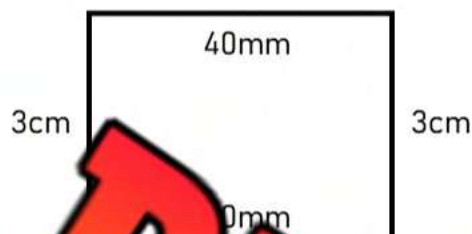
Curriculum Connection
SS6.2

Perimeter of Irregular Polygons

Part 1

Step 1 - Convert the units so they are all the same
Step 2 - Use a formula to calculate the perimeter

1)



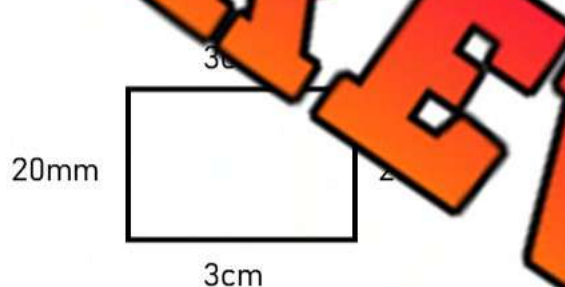
Perimeter = _____

2)



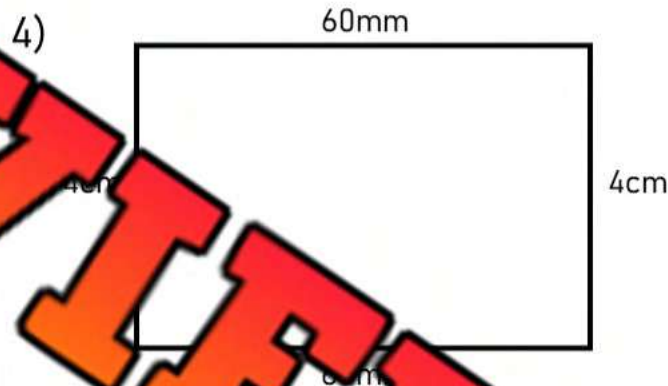
Perimeter = _____

3)



Perimeter = _____

4)

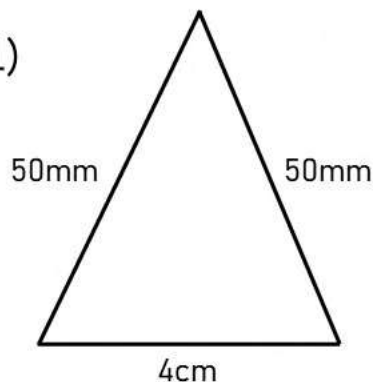


Perimeter = _____

Part 2

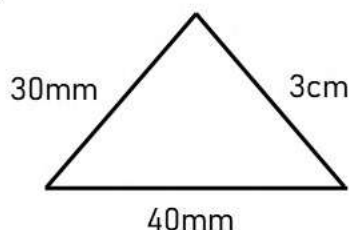
Find the perimeter of the triangles below

1)



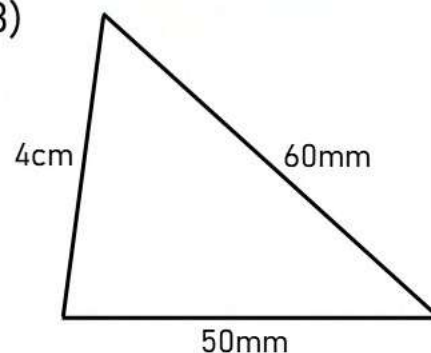
Perimeter = _____

2)



Perimeter = _____

3)



Perimeter = _____

Perimeter Word Problems

Instructions

Draw a picture of the problem and then find the perimeter

1) A computer screen is 91cm by 42cm. What is the perimeter of the screen?

2) Pat is putting a fence around his yard. His yard is 67m by 49m. What is the perimeter of his yard?



3) The school yard is a rectangle that is 120m by 80m. What is the perimeter of the yard?

4) A piece of paper is 153mm by 104mm. What is the perimeter?



5) Mrs. Wilson is putting a border around her bulletin board. The board is 210cm by 1.32m. What is the perimeter of the bulletin board?



Regular and Irregular Polygons - Word Problems

Instructions

Draw a picture of the problem and then find the perimeter

1) Henry built a fence using stones in his yard. The fence was shaped like a regular pentagon. The regular pentagon had side lengths of 13m. What is the perimeter of the shape?



2) Detective Carter taped off a crime scene in an irregular shape. The irregular shape had 6 sides with the following measurements: 9m, 28m, 16m, 35m, 12m, and 47m. What is the distance of the perimeter?



3) Jayden ran a perimeter around his neighbourhood. The perimeter he ran around was a regular hexagon. Each side was 415m long. What is the distance Jayden ran?



Activity: Perimeter Race

Objective

What are we learning about?

Students will practice calculating the perimeters of irregular and regular polygons by racing to answer questions quickly and accurately.

Material

What you will need for the activity.

- Index cards
- Markers or pens
- Timer (optional)



Instructions

How you will implement the activity

1. Prepare a stack of index cards with perimeter questions. Include a mix of regular polygons (e.g., squares, rectangles) and irregular polygons, shapes with various side lengths).
2. Have students line up in a single file (or you can keep them at their desks).
3. Call the first two students in line to the front. Explain that they will answer the perimeter question that the teacher pulls from the stack.
4. Pull a card from the stack and read the question aloud. The first student to answer correctly wins the round.
5. The student who answers correctly stays at the front to compete against the next student in line. The student who loses goes to the end of the line.
6. Optional: If a student wins five rounds in a row, they move to the back of the line to give others a chance to play.
7. Continue the game until all students have had a chance to compete multiple times or until the designated game time is up.

Index Cards

Cut out the Index cards below

A computer screen is 91cm by 42cm. What is the perimeter of the screen?

Paul is building a fence around his yard. His yard is 67m by 49m. What is the perimeter of his yard?

The school yard is a rectangle that is 163m by 127m. What is the perimeter of the yard?

Mrs. Wilson is putting a border around her bulletin board. The board is 210cm by 1.32m. What is the perimeter of the bulletin board?

A rectangular garden is 12.5m by 10m. What is the perimeter of the garden?

The path around the school is a rectangle that is 1.5m by 0.8m. What is the perimeter of the path?

The rectangular field measures 150m by 95m. What is the perimeter of the field?

The basketball court is 28m by 15m. What is the perimeter of the court?

Index Cards

Cut out the Index cards below

The garden path is 5.5m by 2.3m. What is the perimeter of the garden path?

A triangle has side lengths of 3m, 4m, and 5m. What is the perimeter of the triangle?

The sides of a triangle are 6m, 8m, and 10m. What is the perimeter of the triangle?

A triangle has sides of 2m, 300cm, and 2.5m. What is the perimeter of the triangle?

A picture frame is 0.5m by 0.7m. What is the perimeter?

A triangle has sides of 15m, 20m, and 25m. What is the perimeter of the triangle?

The base of a triangle is 6cm, and the other two sides are each 8cm. What is the perimeter of the triangle?

The base of a triangle is 4m, and the other two sides are 450cm and 3.5m. What is the perimeter of the triangle?

Index Cards

Cut out the Index cards below

A farmer fenced his field in the shape of an irregular pentagon. The side lengths were 18m, 22m, 27m, 33m, and 35m. What is the perimeter of the field?

A town square was designed in the shape of an irregular hexagon. The side lengths were 10m, 15m, 20m, 25m, 30m, and 35m. What is the perimeter of the town square?

Sarah jogged on a path shaped like a regular heptagon. Each side was 60m long. What is the distance Sarah jogged?

Rachel created a kite with a frame in the shape of a regular quadrilateral. Each side of the quadrilateral was 45m long. What is the perimeter of the frame?

A school playground was designed in the shape of an irregular quadrilateral. The side lengths were 20m, 25m, 30m, and 35m. What is the perimeter of the playground?

A garden is laid out in the shape of an irregular pentagon. The side lengths were 12m, 15m, 18m, 20m, and 22m. What is the perimeter of the garden?

John built a birdhouse with a base in the shape of a regular pentagon. Each side was 5m long. What is the perimeter of the base?

A parking lot was built in the shape of a regular octagon. Each side of the octagon was 40m long. What is the perimeter of the parking lot?

Exit Cards

Cut Out

Cut out the exit cards below and have students complete them at the end of class

Name: _____

1) Convert the units so they are all the same and calculate the perimeter.

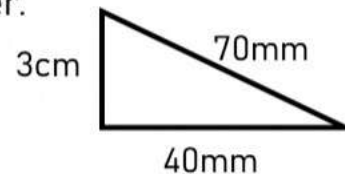


Perimeter = _____

2) A rectangular swimming pool is 25m by 12m. What is the perimeter of the swimming pool?

Name: _____

1) Convert the units so they are all the same and calculate the perimeter.

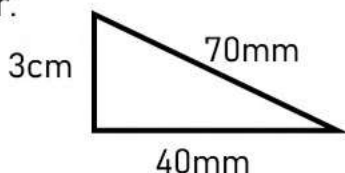


Perimeter = _____

2) A rectangular swimming pool is 25m by 12m. What is the perimeter of the swimming pool?

Name: _____

1) Convert the units so they are all the same and calculate the perimeter.

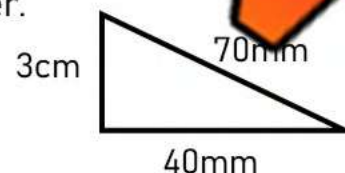


Perimeter = _____

2) A rectangular swimming pool is 25m by 12m. What is the perimeter of the swimming pool?

Name: _____

1) Convert the units so they are all the same and calculate the perimeter.



Perimeter = _____

2) A rectangular swimming pool is 25m by 12m. What is the perimeter of the swimming pool?

Same Area – Different Perimeter**Question**

Is it possible for a shape to have the same area and a different perimeter?

1)

5m



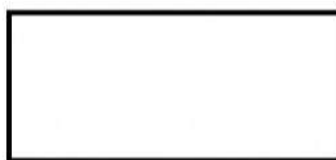
4m

Perimeter: _____

Area: _____

2)

10m



2m

Perimeter: _____m

Area: _____ m²

3)

20m

1m

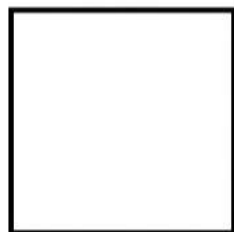


Perimeter: _____m

Area: _____ m²

4)

6cm



8cm

Perimeter: _____cm

Area: _____ cm²

5)

4cm



Perimeter: _____cm

Area: _____ cm²

6)

24cm

8cm

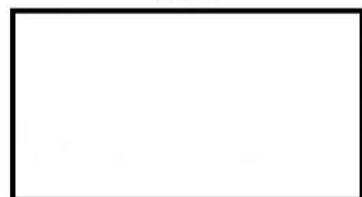


Perimeter: _____cm

Area: _____ cm²

7)

10m



6m

Perimeter: _____m

Area: _____ m²

8)

15m



4m

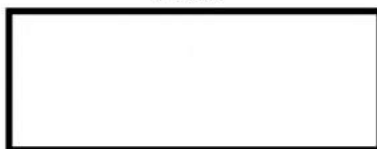
Perimeter: _____m

Area: _____ m²

9)

20m

3m



Perimeter: _____m

Area: _____ m²

Perimeter and Area

Questions

Does a larger perimeter mean a larger area? Answer the questions below

1) School Garden: A school wants to create two rectangular gardens with different dimensions. Garden A measures 15 meters by 5 meters, while Garden B measures 10 meters by 7 meters.

a) What is the perimeter of garden A?

b) What is the perimeter of garden B?

c) Which garden has a larger area to plant crops?

2) Playground Fence: A new school has decided to build two rectangular playgrounds with different dimensions. Playground X has a length of 20 meters and a width of 8 meters, while Playground Y has a length of 18 meters and a width of 10 meters.

a) What is the perimeter of playground X?

a) What is the perimeter of playground Y?

c) Which playground has a larger area to play in?

3) Classroom Carpets: A school needs to buy carpets for two rectangular classrooms with different dimensions. Classroom 1 measures 12 meters by 4 meters, and Classroom 2 measures 9 meters by 6 meters.

a) What is the perimeter of classroom 1?

a) What is the perimeter of classroom 2?

c) Which classroom will need the larger carpet?

Metric System Units – Decimal Conversions

In Canada, we use the metric system. The metric system has 4 main units that we use to measure distances.



BENCHMARKS



Millimetre (mm)	Centimetre (cm)	Metre (m)	Kilometre (km)
15mm = 1.5cm 1500mm = 1.5m	150cm = 1.5m 1cm = 10mm	1.5m = 150cm 1500m = 1.5km	2.3km = 2300m

Part 1 Complete the tables below

mm	cm	m	m	km
5		0.5	1500	
15		1.5		3.5
	2.5	250	5500	
	3.5	350	7500	
45		4		9.5
55		550	500	
	6.5	650	135	
75		7.5		15.5
85		850	1	
	9.5	950		19.5

Part 2 Convert the units of measurement below

1) 1.1m	_____cm	5) 8.12m	_____cm	9) 831cm	_____m
2) 42mm	_____cm	6) 515mm	_____cm	10) 75mm	_____cm
3) 3.7cm	_____mm	7) 426mm	_____cm	11) 6.89m	_____cm
4) 9.3cm	_____mm	8) 7.5cm	_____mm	12) 562cm	_____m

Converting Units - Ladder Method

We can use the ladder method to convert any metric unit of measurement to another simply by following the rules below.

Ladder Method

To convert to a smaller unit, move the decimal point to the right (multiply)



Kilo
1000
Units

Hecto
units

Deka
10 units

Basic Unit
Metres
Litres
Grams

Deci
0.1 Unit

Centi
0.01 Unit

Milli
0.001 unit

To convert to a larger unit, move the decimal point to the left (divide)



Instructions

1. Find your starting unit of measurement
2. Count the jumps to get to your ending unit of measurement
3. Move the decimal the number of jumps up or down the ladder.
Moving Up = Left and Moving Down = Right

EXAMPLE

Convert 5.23 m to mm
(5 jumps down -
move decimal 3 right)
5.23 m = 5230 mm

Practice

Convert the units of measurement below

1) 2.8m _____ mm

5) 7.4km _____ m

9) 11 518m _____ km

2) 418mm _____ cm

6) 807m _____ km

10) 7921mm _____ m

3) 278cm _____ mm

7) 3045m _____ cm

11) 9.52m _____ mm

4) 277.5m _____ km

8) 5232cm _____ mm

12) 12cm _____ mm

Around the World Math Race: Converting L and ML

Objective

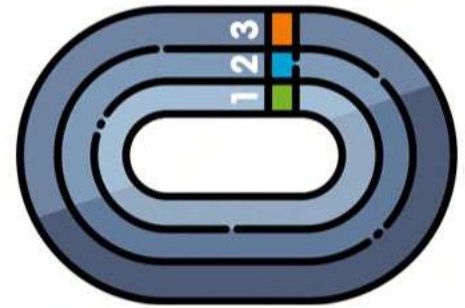
What are we learning about?

Students will practice converting between millimetres, centimetres, metres, and kilometres by quickly answering conversion questions in a competitive and engaging game format.

Materials

What you will need for the activity.

- Conversion questions (e.g., converting millimetres to centimetres and vice versa)
- Optional: Stopwatch
- Chairs arranged in a circle



Instructions

How you will complete the activity

1. Setup: Arrange chairs in a circle, with each student seated in a chair. One student stands behind a seated student to start the race.
2. Explain the Game: Explain to the students that they are participating in a race around the circle by answering conversion questions. The goal is to move around the entire circle and return to their original position.
3. Start the Game: The teacher reads out a conversion question (e.g., "How many centimetres are in 250 millimetres?").
4. Answering the Question: The standing student and the seated student in front of them compete to answer the question first. The student who answers correctly first moves to stand behind the next seated student, while the other student remains seated.
5. Continue the Race: The teacher continues reading out questions, and the process repeats. The standing student continues to move around the circle, answering questions at each stop.
6. Winning the Game: The first student to make it around the entire circle and return to their original position wins the race.
7. Review: After the game, review some of the questions and answers with the class to reinforce the concepts and ensure understanding.

Questions

Use the questions below for the game

Questions

A marathon runner completes 5 km. How many meters did they run?

How many centimeters are in 0.9 meters?

How many kilometers are in 3000 meters?

A pencil is 15 cm long. Express its length in meters.

How many meters are in 1.2 meters?

The distance between two cities is 120 km. Convert it to meters.

A rope is 2.5 m long. How many centimeters is that?

How many kilometers are in 10 meters?

How many centimeters are in 75 meters?

How many millimeters are in 0.1 centimeters?

A train travels 8500 m. Convert this distance to kilometers.

How many kilometers are in 6000 meters?

How many centimeters are in 2.5 meters?

How many millimeters are in 6.8 centimeters?

A cyclist covers 3.2 km. How many meters did they cycle?

How many kilometers are in 9000 meters?

A car travels 250 km. Convert this distance to meters.

A hiking trail is 2.5 km long. Convert this distance to centimetres.

The length of a football field is 100 m. Express it in kilometres.

How many kilometers are in 1500 meters?

How many centimeters are in 4.6 meters?

How many millimeters are in 9.7 centimeters?

Questions

Use the questions below for the game

Questions

A race track is 2.2 km long. Convert this distance to centimetres.

How many millimeters are in 3.7 meters?

How many meters are in 820 centimeters?

A piece of string measures 85 cm. How many meters is that?

A road is 4520 m to the next town. Convert it to kilometers.

How many millimeters are in 2.5 meters?

How many meters are in 920 centimeters?

How many meters are in 300 centimeters?

A bicycle tire has a circumference of 200 cm. Convert it to meters.

How many millimeters are in 0.8 meters?

How many meters are in 150 centimeters?

How many meters are in 2750 millimeters?

A bookshelf is 2.2 m wide. Express its width in millimeters.

How many millimeters are in 4.7 meters?

How many meters are in 670 centimeters?

How many meters are in 5200 millimeters?

The perimeter of a square is 3.65 km. Express it in centimeters.

How many millimeters are in 2.1 meters?

How many meters are in 810 centimeters?

How many meters are in 4600 millimeters?

The height of a tree is 12000 mm. Express it in m.

How many millimeters are in 3.3 meters?

Which is Longer?

Part 1

Put the lengths in order from shortest to longest

1)	10.5m	200.2cm	10.5mm	0.14km

2)	2.5cm	3380mm	0.05km	300m

3)	520mm	525cm	5.5m	0.5km

4)	883cm	8.8m	8000mm	0.8km

Part 2

Read the problems and solve them below.

1. Fred and Norm both walk to school. Fred walks 1753m. Norm walks 1753m. Who walks further to school?
2. Nick and Ryan both competed in long jump at the track meet. Nick jumped 3.45m and Ryan jumped 329cm. Who jumped further?
3. Four friends measure the length of their feet. The results are: Cole (19cm), Ashton (0.22m), Ryker (210mm), and Xander (0.000205km). Rank the friend's feet in order from longest to shortest.



Exit Cards

Cut Out

Cut out the exit cards below and have students complete them at the end of class

Name: _____

1) Convert the units of measurement below.

a) 5.3km = _____m

b) 425m = _____cm

c) 6491cm = _____mm

2) Solve the problem below

Sarah and Tom both ran a race.
Sarah ran 4.2 km and Tom ran 3850 m. Who ran further?

Name: _____

1) Convert the units of measurement below.

a) 5.3km = _____m

b) 425m = _____cm

c) 6491cm = _____mm

2) Solve the problem below

Sarah and Tom both ran in a race.
Sarah ran 4.2 km and Tom ran 3850 m. Who ran further?

Name: _____

1) Convert the units of measurement below.

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Name: _____

1) Convert the units of measurement below.

a) 5.3km = _____m

b) 425m = _____cm

c) 6491cm = _____mm

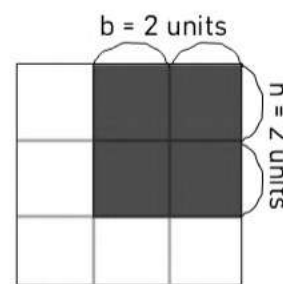
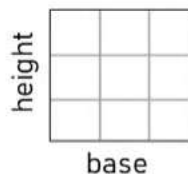
2) Solve the problem below

Sarah and Tom both ran in a race.
Sarah ran 4.2 km and Tom ran 3850 m. Who ran further?

Area – Units Squared

When we calculate the area of a shape, we can use the following formula

$$A = \text{base (b)} \times \text{height (h)}$$



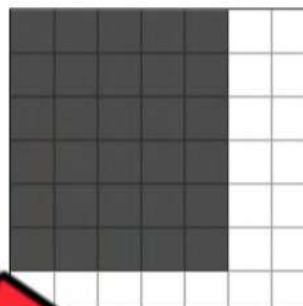
$$\begin{aligned} A &= b \times h \\ A &= 2 \times 2 \\ A &= 4 \text{ units}^2 \end{aligned}$$

Instruction Find the area of the shapes below

1)



2)



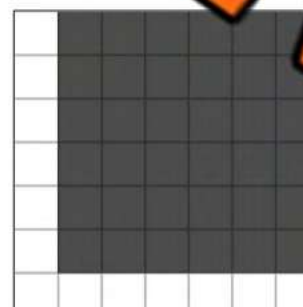
$$\begin{aligned} A &= b \times h \\ A &= _ \times _ \\ A &= _ \text{ units}^2 \end{aligned}$$

3)



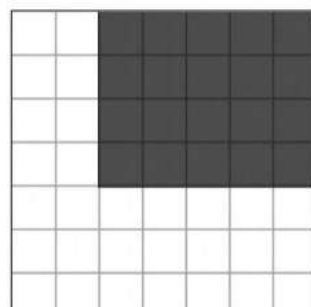
$$\begin{aligned} A &= b \times h \\ A &= _ \times _ \\ A &= _ \text{ units}^2 \end{aligned}$$

6)



$$\begin{aligned} A &= b \times h \\ A &= _ \times _ \\ A &= _ \text{ units}^2 \end{aligned}$$

5)



$$\begin{aligned} A &= b \times h \\ A &= _ \times _ \\ A &= _ \text{ units}^2 \end{aligned}$$

$$\begin{aligned} A &= b \times h \\ A &= _ \times _ \\ A &= _ \text{ units}^2 \end{aligned}$$

7)



$$\begin{aligned} A &= b \times h \\ A &= _ \times _ \\ A &= _ \text{ units}^2 \end{aligned}$$

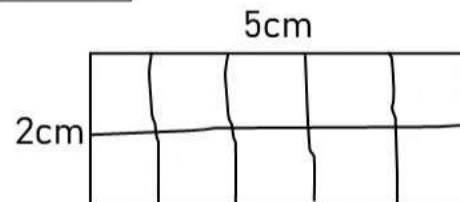
Name: _____

95

Curriculum Connection
SS6.2

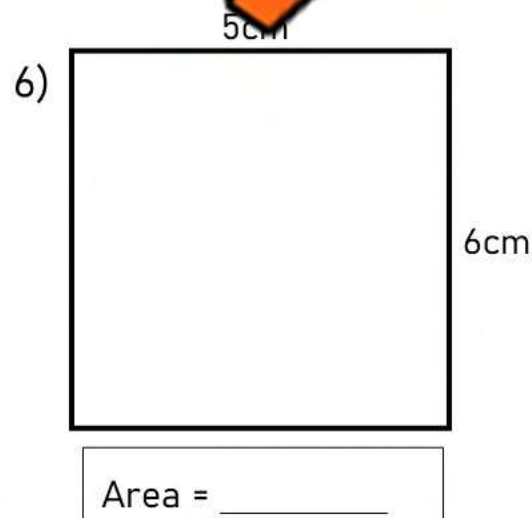
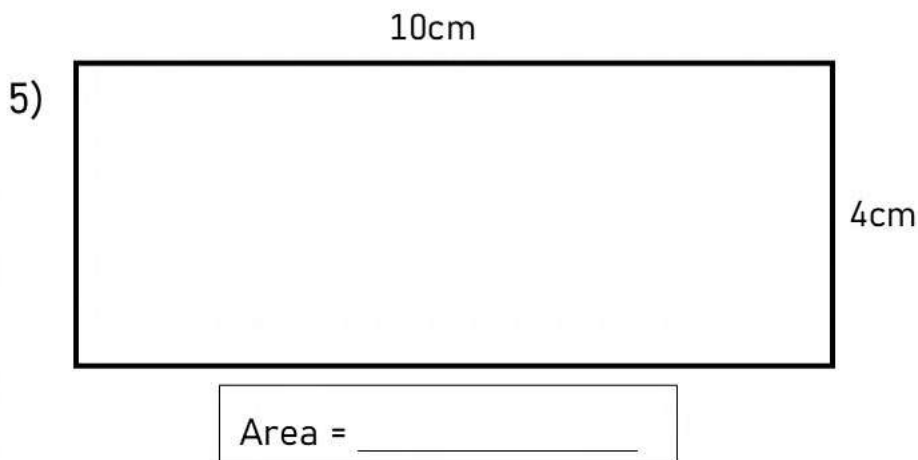
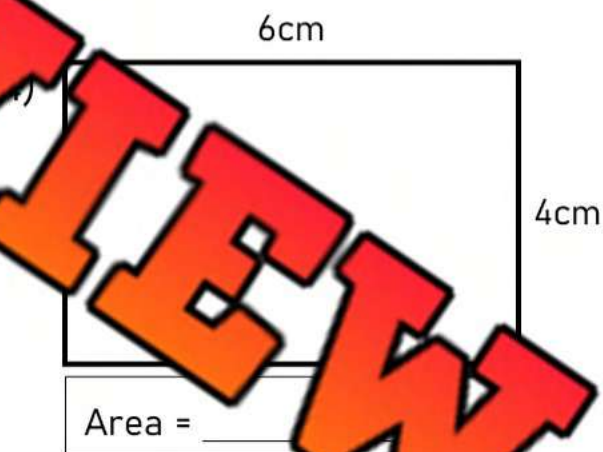
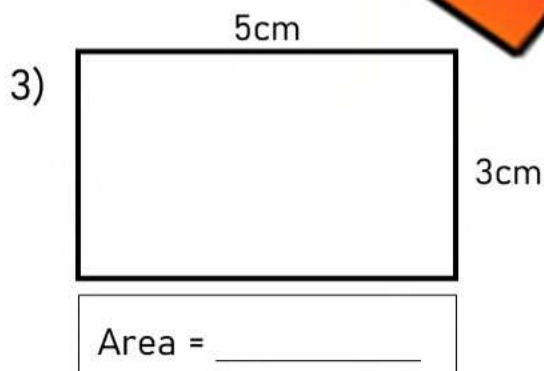
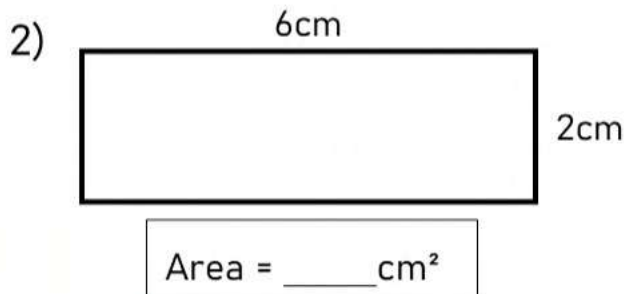
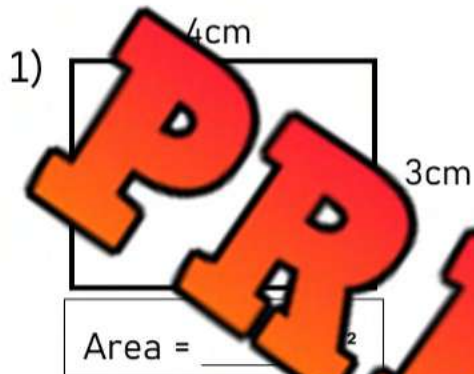
Calculating Area Using CM

We can draw lines on shapes to segment them into cm squares. Try your best to make the squares equal.



Directions

Draw lines in the shapes below to create cm squares. Then count the squares



Name: _____

96

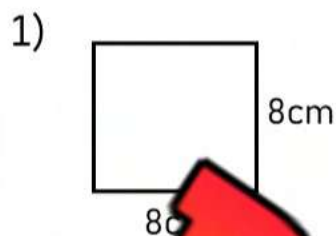
Curriculum Connection
SS6.2

Finding the Area of Rectangles

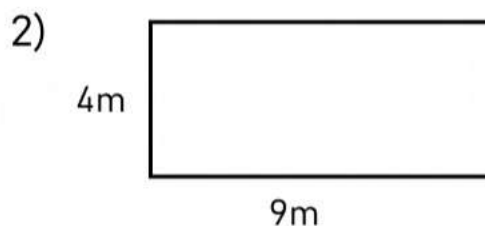
Instructions

Find the area ($A = b \times h$)

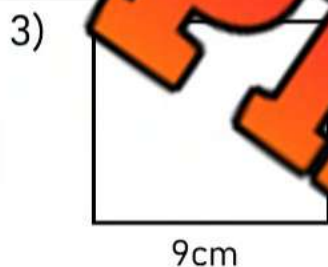
*Not to Scale



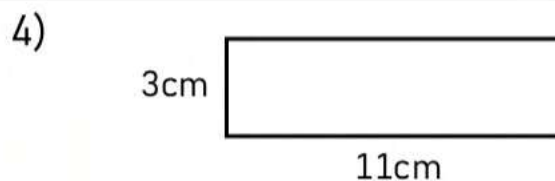
Area = _____



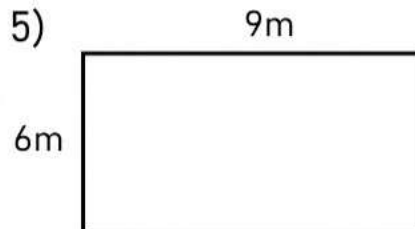
Area = _____



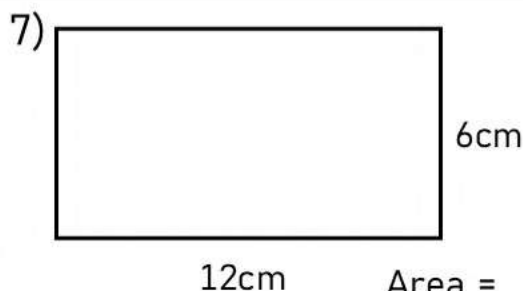
Area = _____



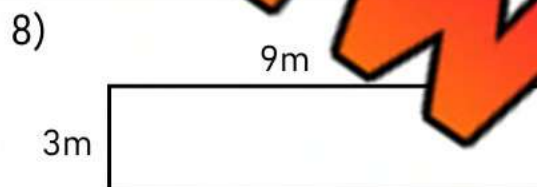
Area = _____



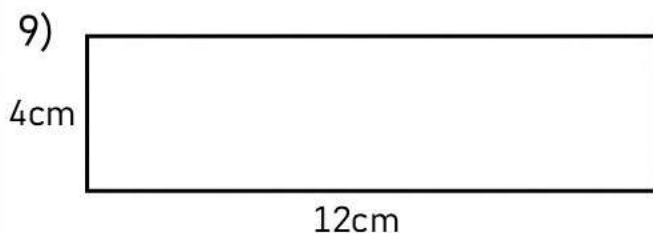
Area = _____



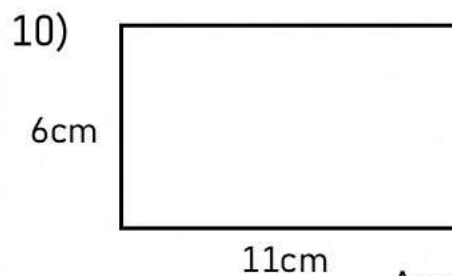
Area = _____



Area = _____



Area = _____



Area = _____

Area Word Problems

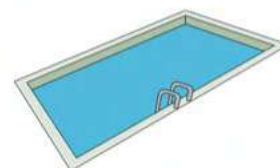
Questions

Draw a picture of the problem and then find the area

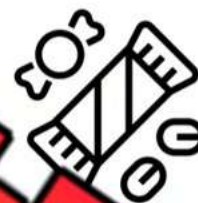
1) A phone is 11cm by 60mm. What is the area of the phone?



2) A pool is 5m by 10m. What is the area of the pool?



3) A candy wrapper is 40mm wide and 5cm long. What is the area of the wrapper in cm?



4) The front of a square box is 12cm wide. What is the area of the front of the box?



5) A door is 3m by 150cm. What is the area of the door?



Finding the Missing Information

InstructionsFind the missing value ($A = b \times h$)

1)

$A = 30\text{cm}^2$

5cm

Base = _____

Height = _____

Area = _____

2)

3cm

$A = 21\text{cm}^2$

Base = _____

Height = _____

Area = _____

3)

$A = 48\text{cm}^2$

8cm

Base = _____

Height = _____

Area = _____

4)

11m

$A = 33\text{m}^2$

Base = _____

Height = _____

Area = _____

5)

4m

$A = 28\text{m}^2$

Base = _____

Height = _____

Area = _____

6)

A=3

Base = _____

Height = _____

Area = _____

7)

$A = 64\text{cm}^2$

8cm

Base = _____

Height = _____

Area = _____

8)

1m

$A = 12\text{m}^2$

Base = _____

Height = _____

Area = _____

9)

$A = 77\text{cm}^2$

11cm

Base = _____

Height = _____

Area = _____

10)

7cm

$A = 56\text{cm}^2$

Base = _____

Height = _____

Area = _____

Finding the Missing Information – Word Problems**Instructions**

Use the information you have to find the missing height or base

1) A piece of paper has an area of 63cm^2 . The base of the paper is 7cm . What is the height of the paper?



2) Huong's yard is in the shape of a quadrilateral. It has an area of 81m^2 . What are the side lengths?



3) A bus has an area of 24m^2 . The height of the bus is 4m . What is the base?



4) A poster shaped like an irregular quadrilateral has a base of 12cm and an area of 126cm^2 . What is the height of the poster?



5) A cookie sheet has an area of 104cm^2 . The base of the sheet is 8cm . What is the height of the cookie sheet?



Task Cards: Area Calculation Expedition

Objective

What are we learning about?

Students will develop their skills in determining the area of different shapes, enhancing their understanding of geometry through an interactive and engaging activity.

Materials

What you will need for the activity.

- 24 task cards
- Student answer sheet for answers
- Pen



Instructions

What you will do for the activity

1. Start by explaining the concept of area for both regular and irregular polygons. Highlight how this knowledge applies in various real-life contexts.
2. Pair up the students and provide each pair with a set of task cards.
3. Hand out an answer recording sheet to each pair for recording their solutions.
4. Foster teamwork by encouraging students to work together with their partner to solve the area problems.
5. Allow students to choose any task card to start with, and let them know they can complete the cards in any order they prefer.
6. Instruct students to record the letter of their chosen answer (A, B, or C) on their answer sheet next to the task card's number.
7. Use a timer to create a dynamic and competitive environment, adjusting the duration to fit the lesson's objectives and complexity.
8. After the activity, review the answers as a class, discussing any challenging problems and the strategies used to solve them.
9. Encourage students to reflect on the activity by sharing the methods they used and any obstacles they encountered.

Task Cards

Cut out the task cards below

Card 1:

A rectangular pool has an area of $75,000\text{cm}^2$. If the length is 3m, what is the width in cm?

Card 5:

Find the missing value ($A = b \times h$). Base = 12cm, Height = 6cm, Area = _____

Card 6:

A rectangular field has an area of $25,000\text{cm}^2$. If the width is 10m, what is the length in cm?

A square has a side length of 15cm. What is the area of the square?

Card 3:

A candy wrapper is 40mm wide and 0.10m long. What is the area of the wrapper in cm^2 ?

Card 7:

A rectangle has an area of 120m^2 . If the length is 20m, what is the width?

Card 4:

A rectangular basement has a length of 18m and a width of 12m. What is the area of the basement?

Card 8:

A rectangle has an area of 150cm^2 . If the height is 15cm, what is the base?

Task Cards

Cut out the task cards below

Card 9:

A rectangular field has an area of 250m^2 .
If the width is 25m, what is the length?

Card 13:

A rectangular garden has a length of 16m and a width of 10m. What is the area of the garden?

Card 14:

A square playground has a side length of 11m. What is the area of the playground?

A rectangular classroom has an area of $120,000\text{cm}^2$. If the width is 15m, what is the length in m?

Card 11:

A rectangle has a length of 10m and a width of 6m. What is the area of the rectangle?

Card 15:

A rectangular sheet of paper has an area of 80cm^2 . If the width is 4cm, what is the length in cm?

Card 12:

A square tile has a side length of 10cm. What is the area of the tile?

Card 16:

A rectangular piece of wood has an area of 36cm^2 . If the height is 6cm, what is the base?

Task Cards

Cut out the task cards below

Card 17:

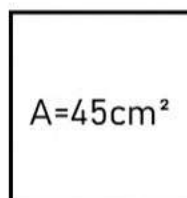


90mm

10mm

Area = _____

Card 21:

 $A=45\text{cm}^2$

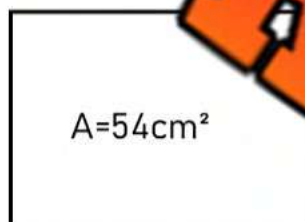
5cm

Base = _____

Height = _____

Area = _____

Card 22:

 $A=54\text{cm}^2$

6cm

Base = _____

Height = _____

Area = _____



900cm

3m

Area = _____

Card 19:



3000m

8km

Area = _____

Card 23:



7m

 $A=63\text{m}^2$

Base = _____

Area = _____

Card 20:



11.5m

5.3cm

Area = _____

Card 24:



3m

5400cm

Area = _____

Name: _____

105

Curriculum Connection
SS6.2

Task Cards: Area Calculation

Answers

Record your answers below

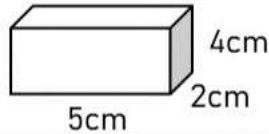
1	
2	
4	
5	
6	
7	
8	
9	
10	
11	
12	

13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	

Calculating Volume - Blocks

Rectangular Prism - Calculating Volume

To find the volume of a rectangular prism, multiply the length by the width by the height.



$$\begin{aligned}v &= l \times w \times h \\v &= 5\text{cm} \times 2\text{cm} \times 4\text{cm} \\v &= 40\text{cm}^3\end{aligned}$$

Instructions

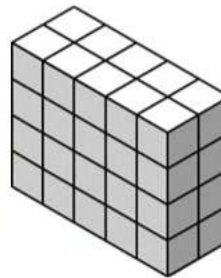
Label the rectangular prisms and then calculate the volume

1)



h = _____

2)



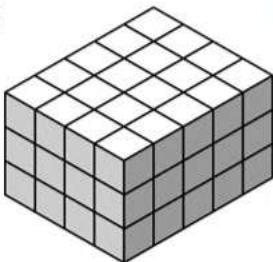
l = _____

w = _____

h = _____

v = _____

3)



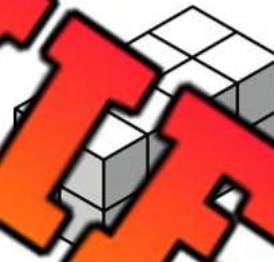
l = _____

w = _____

h = _____

v = _____

4)



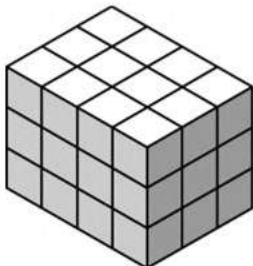
l = _____

w = _____

h = _____

v = _____

5)



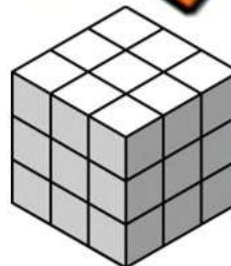
l = _____

w = _____

h = _____

v = _____

6)



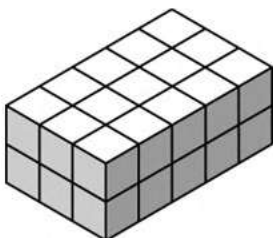
l = _____

w = _____

h = _____

v = _____

7)



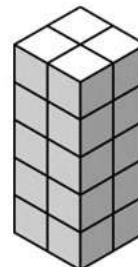
l = _____

w = _____

h = _____

v = _____

8)



l = _____

w = _____

h = _____

v = _____

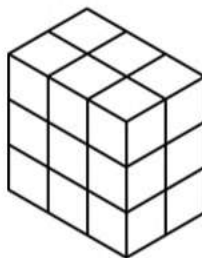
Calculating Volume - Blocks

InstructionsCalculate the volume of the rectangular prisms below – $l \times w \times h$

1)



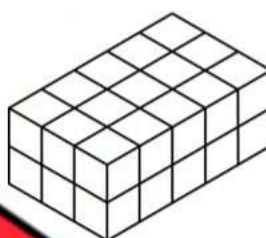
2)



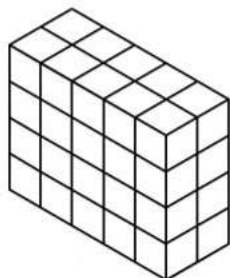
3)



4)



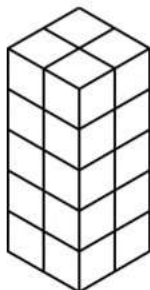
5)



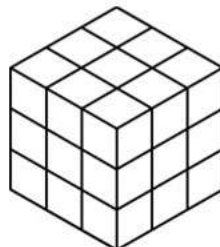
6)



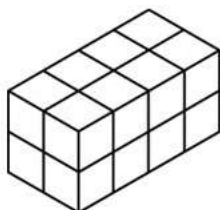
7)



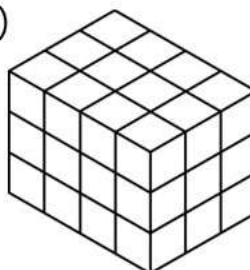
8)



9)



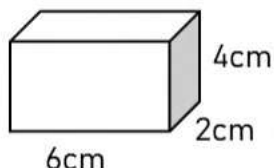
10)



Calculating Volume of Rectangular Prisms

Rectangular Prism - Calculating Volume

To find the volume of a rectangular prism, multiply the length by the width by the height.



$$v = l \times w \times h$$
$$v = 6\text{cm} \times 2\text{cm} \times 4\text{cm}$$
$$v = 48\text{cm}^3$$

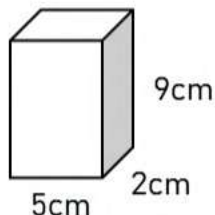
Instruction

Calculate the volume of the rectangular prisms

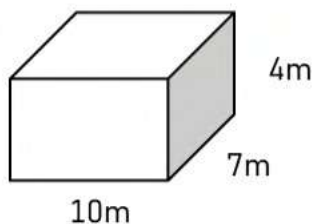
1)



2)



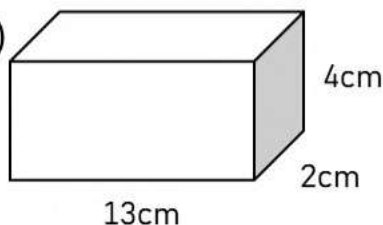
3)



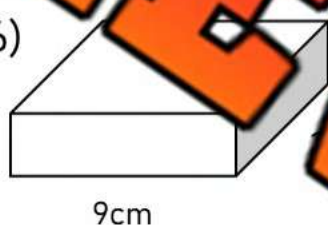
4)



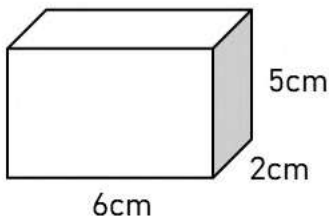
5)



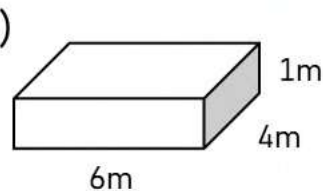
6)



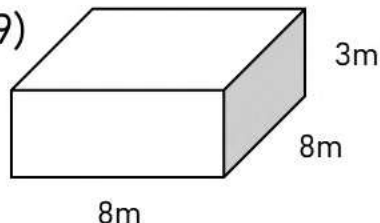
7)



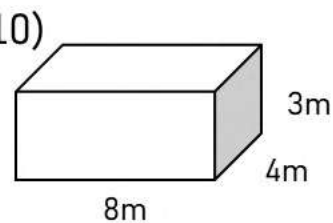
8)



9)



10)

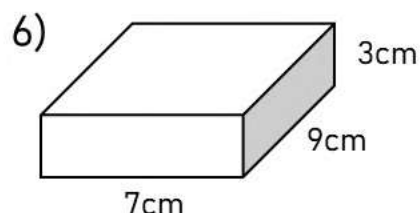
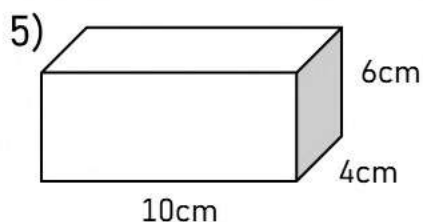
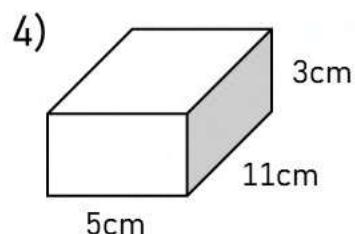
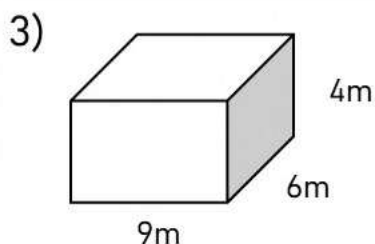
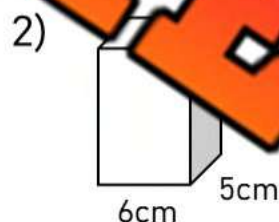
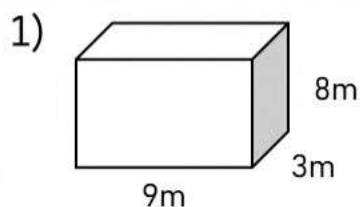


Calculating Volume of Rectangular Prisms

Part 1 A variety of small boxes are used for packaging. Find the volume of each box

Box Type	Length	Width	Height	Volume
Box 1	9cm	6cm	2cm	
Box 2	7cm	5cm	10cm	
Box 3	5cm	8cm	3cm	
Box 4	6cm	9cm	3cm	
Box 5	4cm	8cm	6cm	
Box 6	5cm	4cm	8cm	
Box 7	7cm	5cm	4cm	

Part 2 Calculate the volume of the rectangular prisms

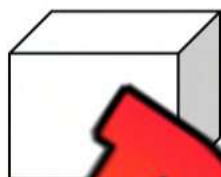


Calculating Volume of Rectangular Prisms

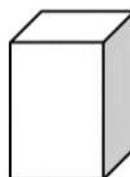
Instructions

Label the rectangular prisms and then calculate the volume

1)

 $l = 6\text{cm}$
 $w = 4\text{cm}$
 $h = 3\text{cm}$ $v = \underline{\hspace{2cm}}$

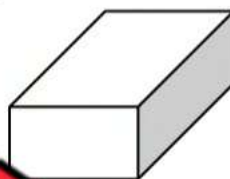
2)

 $l = 5\text{m}$
 $w = 3\text{m}$
 $h = 9\text{m}$ $v = \underline{\hspace{2cm}}$

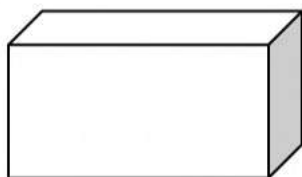
3)

 $l = 8\text{m}$
 $w = 4\text{m}$
 $h = 3\text{m}$ $v = \underline{\hspace{2cm}}$

4)

 $l = 4\text{cm}$
 $w = 12\text{cm}$
 $h = 3\text{cm}$ $v = \underline{\hspace{2cm}}$

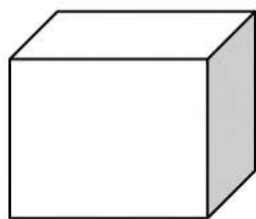
5)

 $l = 11\text{cm}$
 $w = 2\text{cm}$
 $h = 5\text{cm}$ $v = \underline{\hspace{2cm}}$

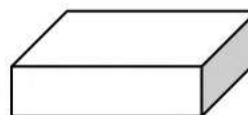
6)

 $l = 6\text{m}$
 $w = 8\text{m}$
 $h = 2\text{m}$ $v = \underline{\hspace{2cm}}$

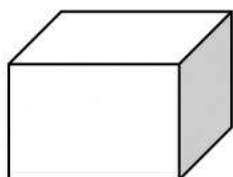
7)

 $l = 7\text{m}$
 $w = 3\text{m}$
 $h = 5\text{m}$ $v = \underline{\hspace{2cm}}$

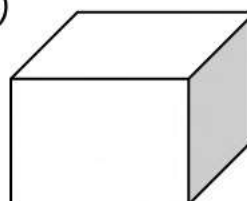
8)

 $l = 4\text{m}$
 $w = 3\text{cm}$
 $h = 1\text{cm}$ $v = \underline{\hspace{2cm}}$

9)

 $l = 10\text{cm}$
 $w = 6\text{cm}$
 $h = 4\text{cm}$ $v = \underline{\hspace{2cm}}$

10)

 $l = 9\text{m}$
 $w = 8\text{m}$
 $h = 4\text{m}$ $v = \underline{\hspace{2cm}}$

Calculating Volume of Rectangular Prisms

Instructions

Solve the word problems below

1) A classroom has a width of 12m, height of 2m, and a length of 10m. What is the volume of the classroom?



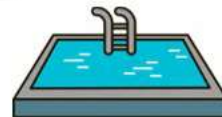
2) An elevator is 2m high, 1m deep, and 4m long. What is the volume of the elevator?



3) A block has a height of 7cm, width of 5cm, and a length of 10cm. What is the volume of the block?



4) A pool is 9m long, 6m wide, and 3m deep. What is the volume of the pool?



5) A lunchbox is 12cm wide, 7cm tall, and 10cm deep. What is the volume of the lunchbox?



Calculating Volume Using the Base

Instructions

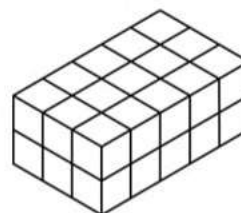
Fill in the blanks to investigate the area of the base and the height

1)



Area of Base	Height	Volume
		18

2)



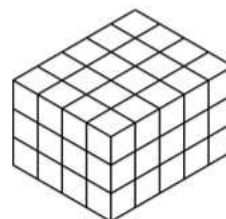
Area of Base	Height	Volume

3)



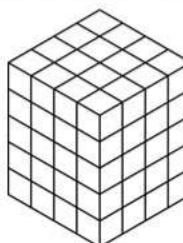
Area of Base	Height	Volume

4)



Area of Base	Height	Volume

5)



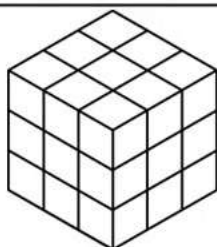
Area of Base	Height	Volume

6)



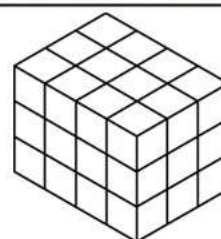
Area of Base	Height	Volume

7)



Area of Base	Height	Volume

8)



Area of Base	Height	Volume

Calculating Volume Using the Base

Part 1

Fill in the blanks to investigate the area of the base and the height

	Area of Base	Height	Volume
1)	10 cm^2		80 cm^3
2)	13 mm^2	6 mm	
3)		5 cm	75 cm^3
4)		8 mm	96 mm^3
5)		9 m	
6)	16 m^2		144 mm^3
7)		4 m	132 km^3
8)	15 m^2		210 m^3

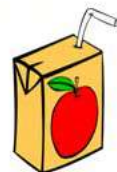
Part 2

Answer the questions below

1) A box of cereal has a base with a length of 12 cm and a width of 4 cm . The height of the box is 22 cm . What is the volume of the box?



2) A juice box is 9 cm wide and 5 cm long. The height of the juice box is 12 cm . What is the volume of the juice box?



3) A railway car is 6.5 m long and 2.2 m wide. The railway car is 3.1 m tall. What is the volume of the railway car?



Volume Jeopardy

Objective

What are we learning about?

To reinforce students' understanding of calculating the volume of rectangular prisms by solving problems in a fun and competitive game format.

Materials: What you will need for the activity.

- Jeopardy board and questions
- Buzzer or bell



Instructions

How you will complete the activity

1. Print the Jeopardy board on the next page.
2. Divide the class into two teams.
3. Ask one team to go first by selecting a point value.
4. Read the question aloud from the point value.
5. The first team to ring the bell or buzzer gets to answer.
6. If they answer correctly, award them the points. If not, another team can answer.
7. Continue the game until all questions have been answered.
8. Tally the points to determine the winning team.
9. Conclude by discussing what they learned about the topic in the questions.

Jeopardy Questions

Ask students the questions below

\$100	\$200	\$300	\$400	\$500
L=2m, W=5m, H=4m, V=?	The base is 12 cm^2 and the height is 6 cm. What is the volume?	The volume is 240 cm^3 and the height is 6 cm. What is the base area?	L=2, W= H=3, V=48. Find W	The volume is 400 cm^3 and the height is 8 cm. What is the base area?
L=3cm, W=4cm, H=2cm, V=?	The volume is 120 cm^3 and the base is 10 cm^2 . What is the height?	The base is 20 cm^2 and the height is 5 cm. What is the volume?	The volume is 300 cm^3 and the height is 10 cm. What is the base area?	The volume is 500 cm^3 and the height is 10 cm. What is the base area?
L=4cm, W=5cm, H=3cm, V=?	The base is 2 cm^2 and the height is 6 cm. What is the volume?	L=4, W=10, H=10, V=?	The base is 30 cm^2 and the height is 4 cm. What is the volume?	The volume is 180 cm^3 and the base is 15 cm^2 . What is the height?
L=2m, W=8m, H=3m, V=?	The volume is 400 cm^3 and the height is 10 cm. What is the base area?	L=15cm, W=20cm, H=10cm, V=?	The volume is 500 cm^3 and the base is 50 cm^2 . What is the height?	The volume is 540 cm^3 and the height is 15 cm. What is the base area?
L=5m, W=5m, H=3m, V=?	The volume is 240 cm^3 and the base is 20 cm^2 . What is the height?	The volume is 360 cm^3 and the base is 12 cm^2 . What is the height?	The volume is 600 cm^3 and the base is 50 cm^2 . What is the height?	The volume is 720 cm^3 and the base is 24 cm^2 . What is the height?
L=7cm, W=5cm, H=3cm, V=?	The volume is 300 cm^3 and the height is 10 cm. What is the base area?	L=70m, W=40m, H=20m, V=?	The volume is 450 cm^3 and the height is 9 cm. What is the base area?	The volume is 600 cm^3 and the height is 15 cm. What is the base area?

Exit Cards

Cut Out

Cut out the exit cards below and have students complete them at the end of class

Name: _____

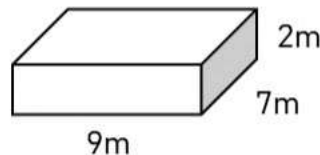
1) What is the volume of the rectangular prism?



2) A swimming pool is 10m long, 5m wide, and 2.5m deep. What is the volume of the swimming pool?

Name: _____

1) What is the volume of the rectangular prism?

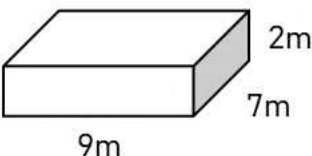


$V =$ _____

2) A swimming pool is 10m long, 5m wide, and 2.5m deep. What is the volume of the swimming pool?

Name: _____

1) What is the volume of the rectangular prism?

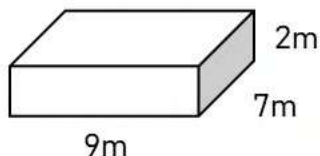


$V =$ _____

2) A swimming pool is 10m long, 5m wide, and 2.5m deep. What is the volume of the swimming pool?

Name: _____

1) What is the volume of the rectangular prism?



$V =$ _____

2) A swimming pool is 10m long, 5m wide, and 2.5m deep. What is the volume of the swimming pool?

Unit Quiz – Perimeter, Area, Volume

Part 1

Use a formula to find the perimeter and area of the rectangles below

Shape	Perimeter	Area
1)  4cm		
2)  12cm		
3)  20m		

Part 2

Answer the word problems below

1) Lucas built a wood fence in his yard. The fence was shaped like a regular pentagon. The regular pentagon had side lengths of 12m. What is the length of the fence?

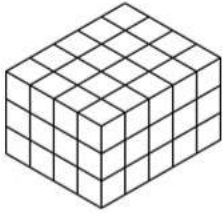
2) Detective Roberts taped off a crime scene in an irregular shape. The irregular shape had 7 sides with the following measurements: 14m, 9m, 27m, 15m, 32m, 12m, and 47m. What is the distance of the perimeter the detective taped off?



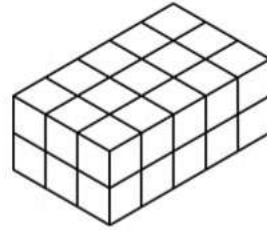
Part 3

Fill in the blanks to investigate the area of the base and the volume

1)

Area of BaseHeightVolume

2)

Area of BaseHeightVolume

Part 4

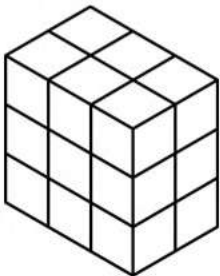
Fill in the blanks to investigate the area of the base and the volume

		Height	Volume
1)			110 cm ³
2)	15 mm	mm	
3)			96 cm ³
4)		1 mm	132 mm ³

Part 5

Calculate the volume of the rectangular prism

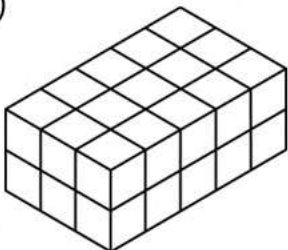
1)



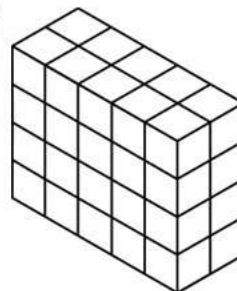
2)



3)



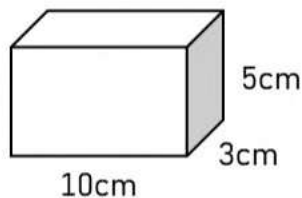
4)



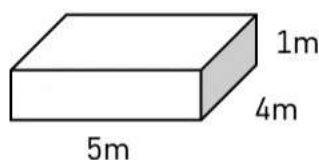
Part 6

Calculate the volume of the rectangular prisms

1)



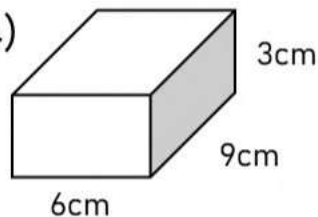
2)



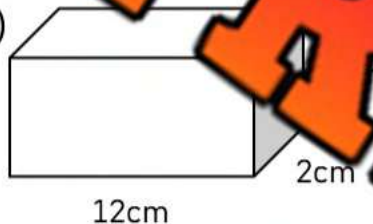
3)



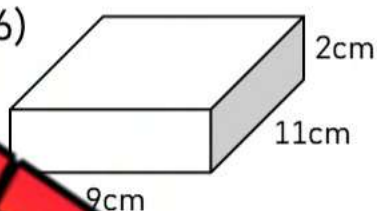
4)



5)



6)



Part 7

Answer the word problems below

1) A closet has a height of 2m, a length of 3m, and a width of 4m. What is the volume of the closet?

2) A block is 9cm wide, 6cm tall, and 11cm long. What is the volume of the block?

Using a Coordinate Grid - Challenge**Instructions**

Write the letters on the grid according to its

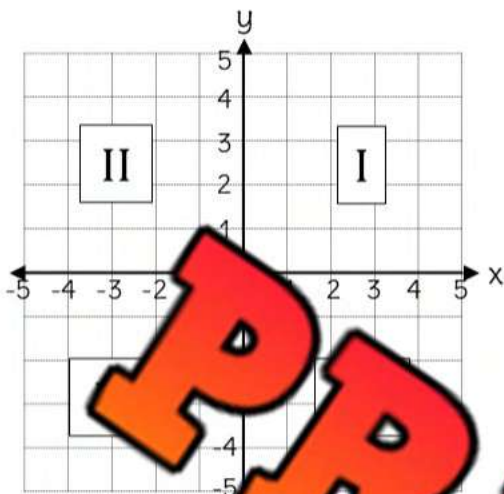
Letter	Coordinates (x, y)
A	(25, 55)
B	(65, 45)
C	(65, 80)
D	(25, 70)
E	(30, 55)

Letter	Coordinates (x, y)
F	(85, 25)
G	(75, 75)
H	(95, 15)
I	(55, 95)
J	(75, 5)

Four Quadrants - Cartesian Plane

Part 1

Write which quadrant the points would be found



Coordinates (x, y)	Quadrant
(2, -4)	
(5, 4)	
(-4, -5)	
(-2, 3)	
(5, 2)	

Part 2

Write your coordinates for a point that could be found in the quadrant

Quadrant	Coordinates (x, y)
Quadrant I	
Quadrant II	
Quadrant III	
Quadrant IV	
Quadrant III	
Quadrant II	
Quadrant IV	
Quadrant I	

Part 3

Which quadrant number is associated with the descriptions below

	Description	Quadrant
1)	Both positive values	
2)	Both negative values	
3)	An x positive value and y negative value	
4)	An x negative value and y positive value	

Using 4 Quadrants on a Cartesian Plane



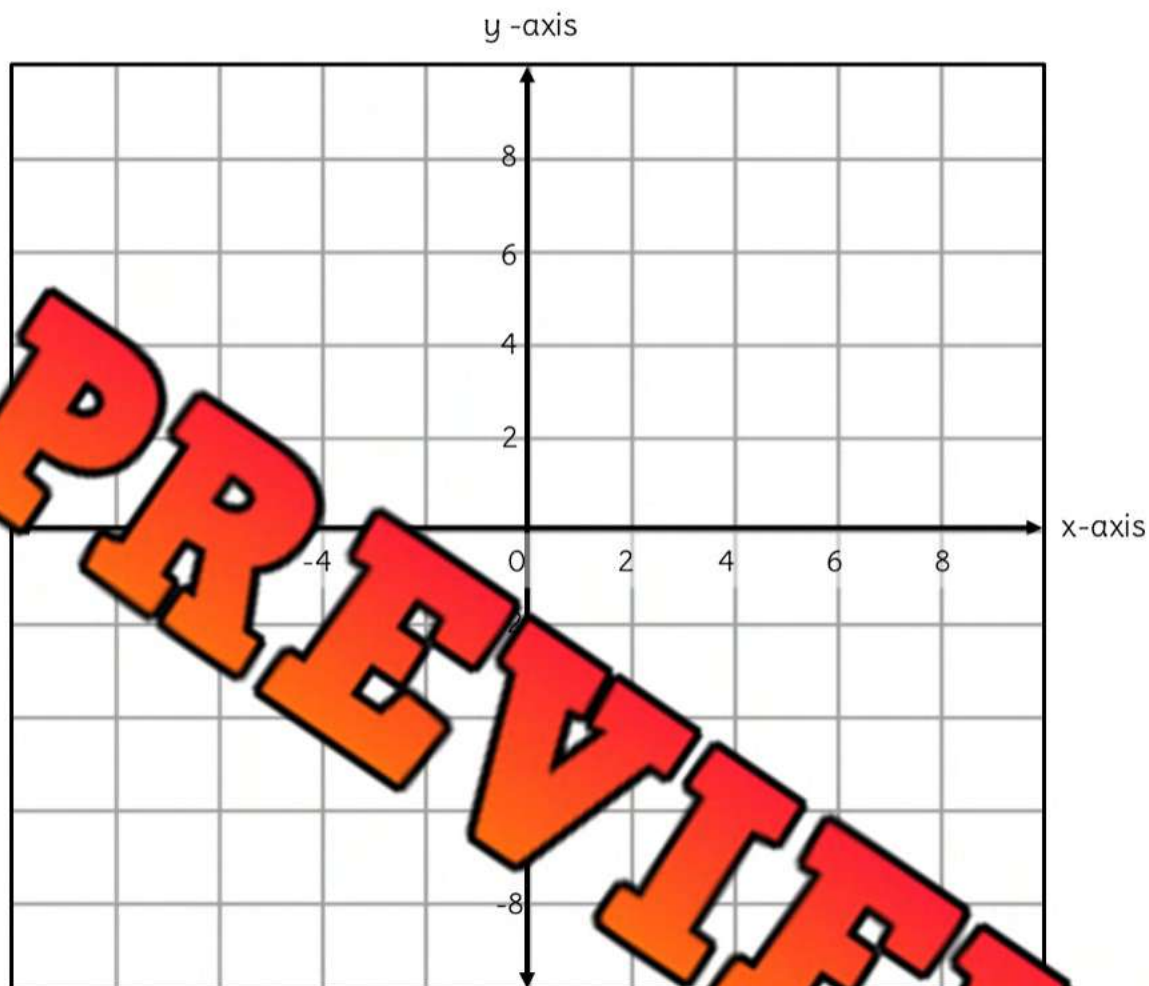
Instructions

Write the coordinates for each object in the Cartesian plane.

Symbol	Coordinates (x, y)
	(8, -4)
	(____, ____)
	(____, ____)
	(____, ____)
	(____, ____)

Symbol	Coordinates (x, y)
	(____, ____)
	(____, ____)
	(____, ____)
	(____, ____)
	(____, ____)

Using 4 Quadrants on a Cartesian Plane



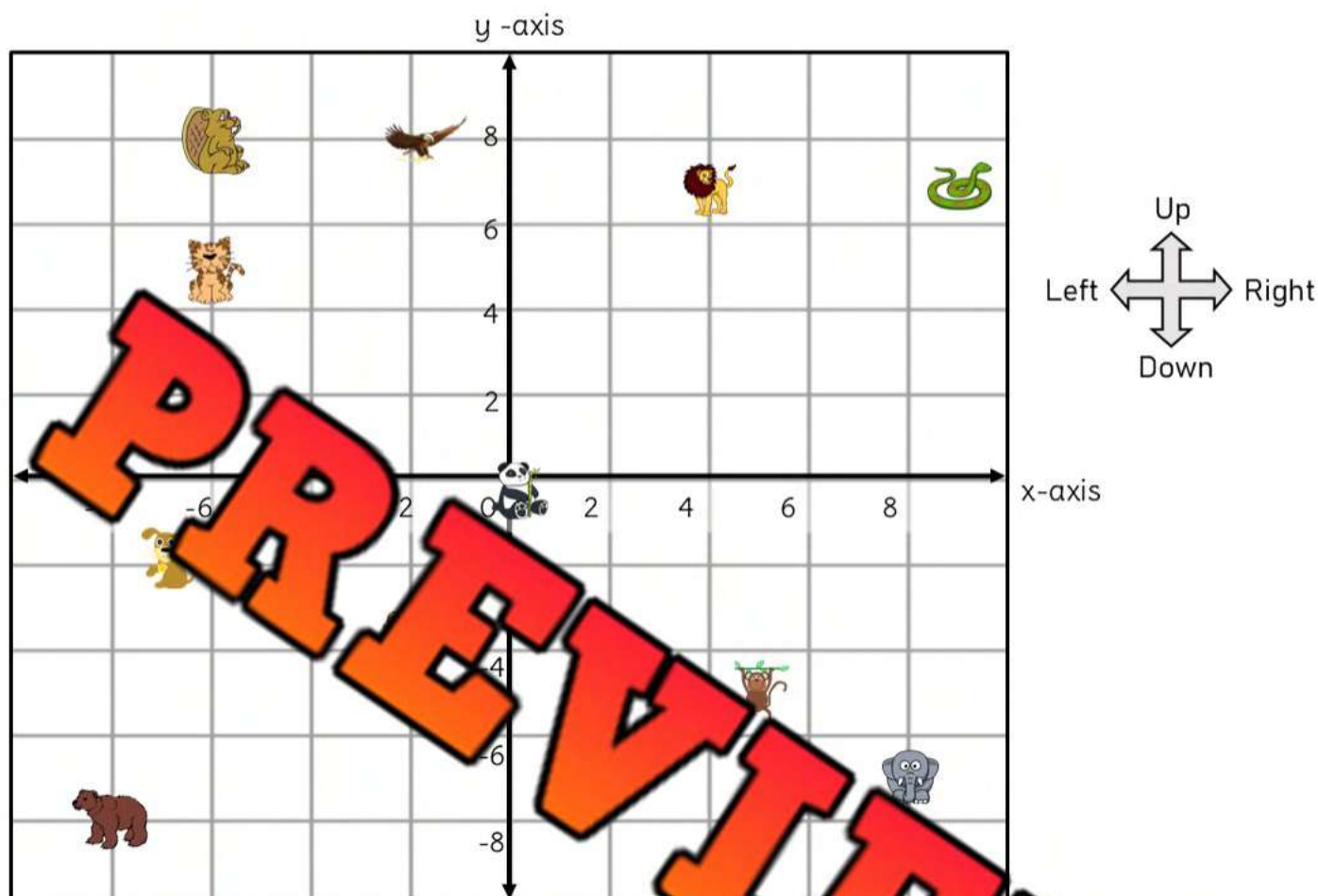
Instructions

Write the letters on the grid according to the coordinates.

Letter	Coordinates (x, y)
A	(-2, 4)
B	(-6, 6)
C	(8, -4)
D	(7, 4)
E	(-2, -2)

Letter	Coordinates (x, y)
F	(-5, 3)
G	(8, 8)
H	(-6, 1)
I	(3, -8)
J	(0, -7)

Using a Coordinate System

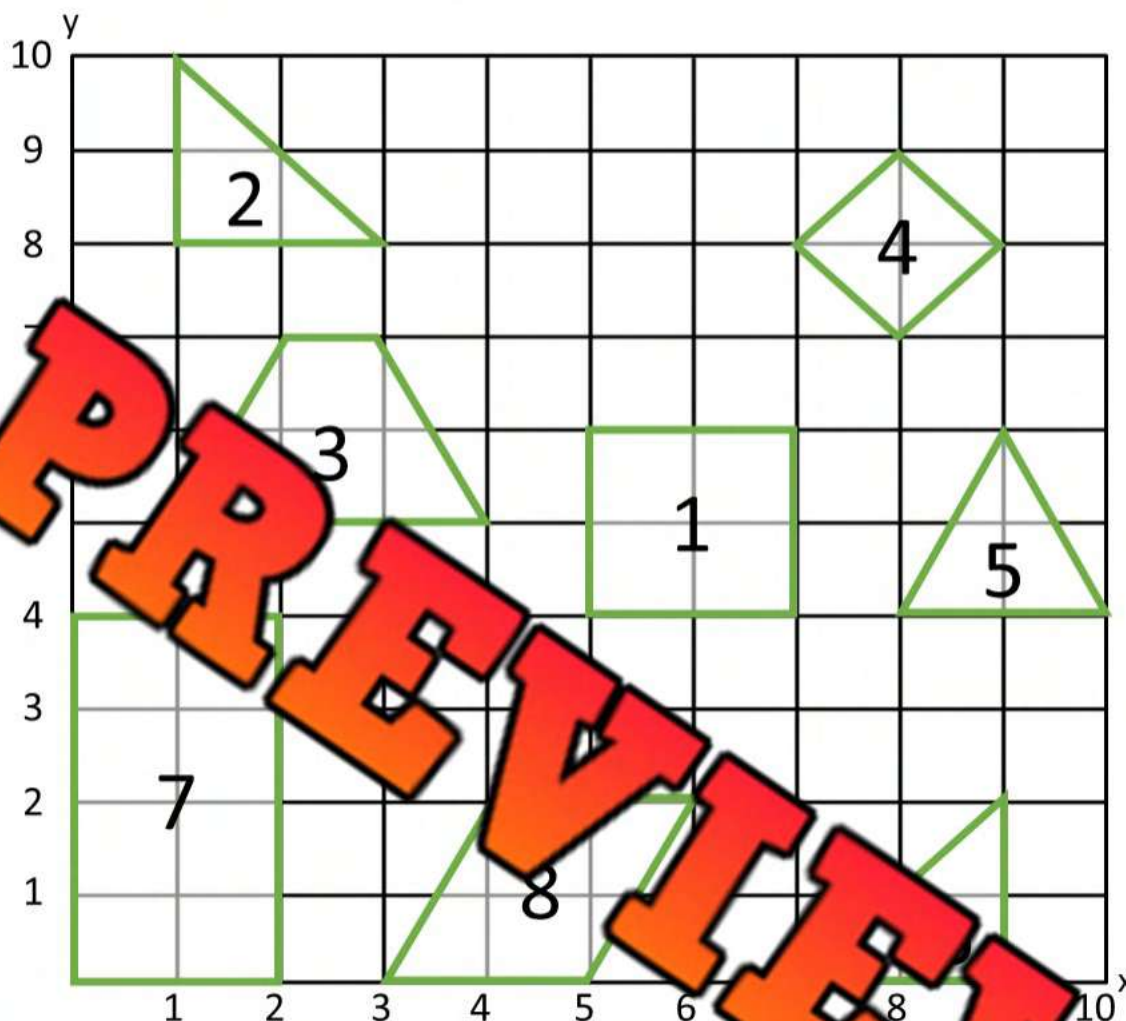


Instructions

Explain the translation from the first symbol to the second

Symbols	Coordinates	
 → 	(__, __) → (__, __)	
 → 	(__, __) → (__, __)	
 → 	(__, __) → (__, __)	
 → 	(__, __) → (__, __)	
 → 	(__, __) → (__, __)	
 → 	(__, __) → (__, __)	

Plotting Polygons on a Coordinate Grid

**Instructions**

Write the coordinates for the vertices of each

Polygon	Coordinates (x, y)
1	
2	
3	
4	

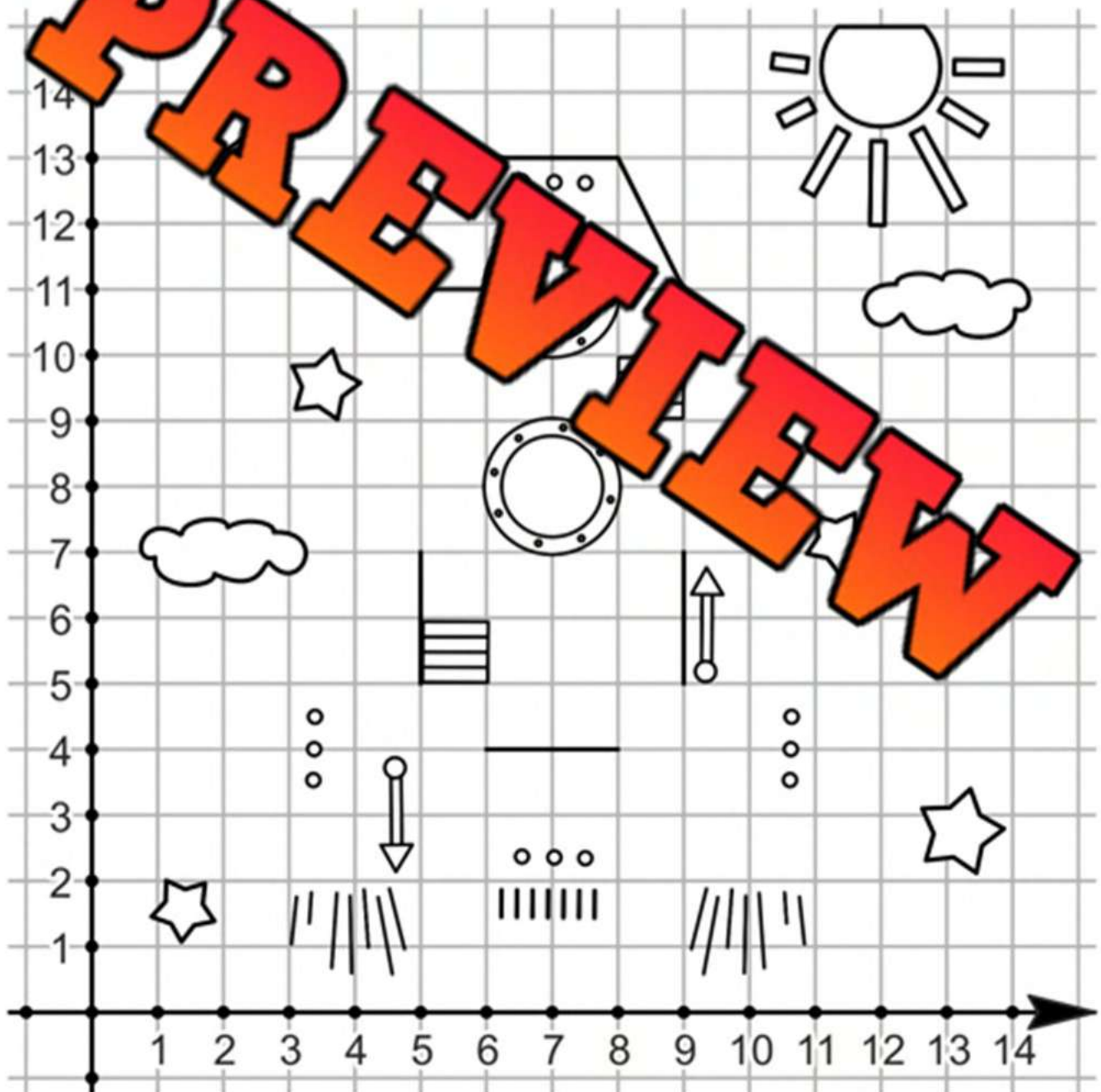
Polygon	Coordinates (x, y)
5	
6	
7	
8	

Drawing With Coordinates

Instructions

Plot and connect the dots with the coordinates below

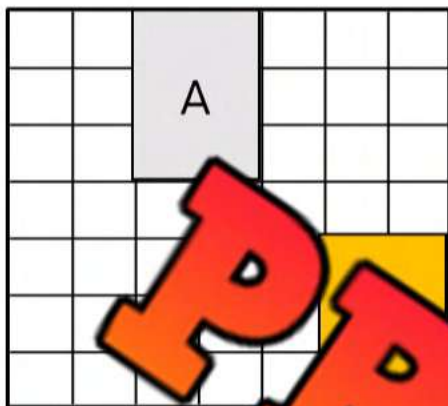
(8, 11),	(9, 2),	(6, 3),	(5, 8),	(6, 13).
(9, 11),	(9, 4),	(5, 4),	(5, 11),	
(9, 8),	(8, 3),	(5, 2),	(6, 13),	
(11, 5),	(8, 2),	(3, 2),	(7, 14),	
(1, 2),	(6, 2),	(3, 5),	(8, 13),	



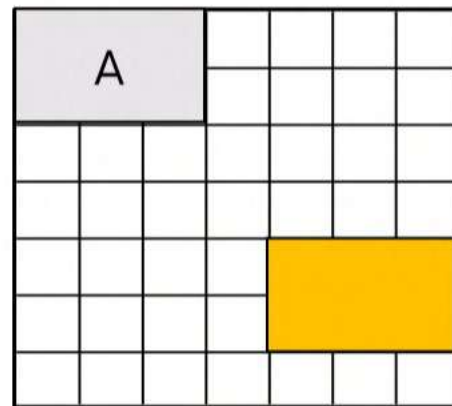
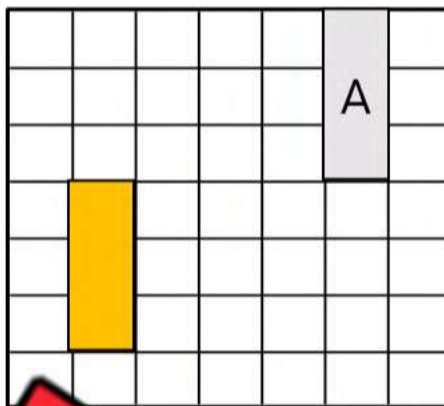
Describing Translations

Instructions

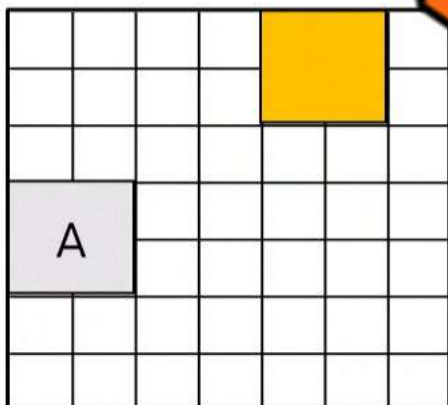
Describe the translations below. Shape A is the original object



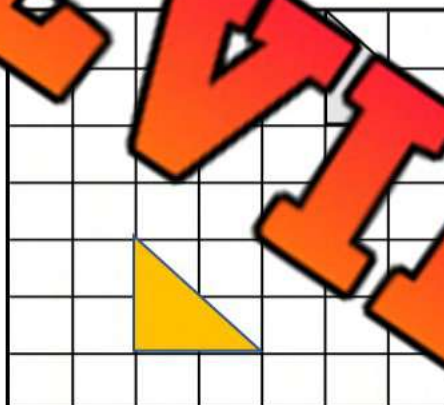
1) down 4, _____



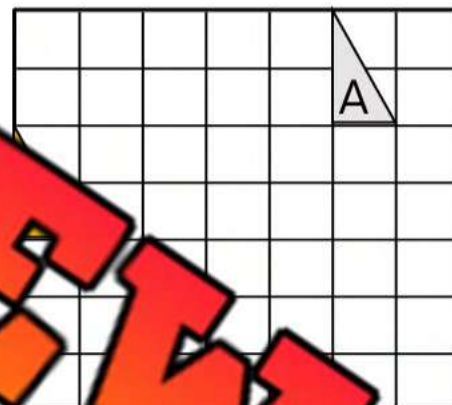
3) _____



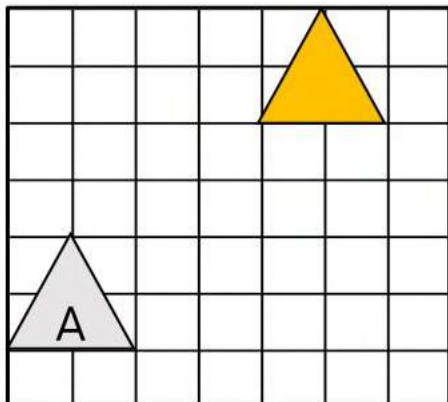
4) _____



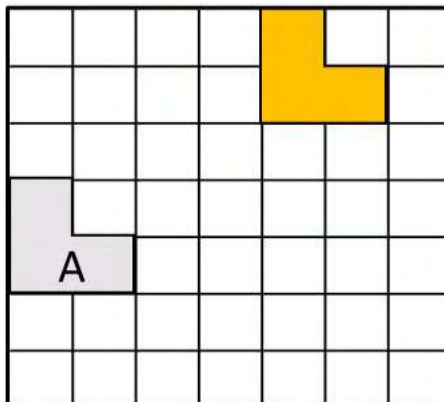
5) _____



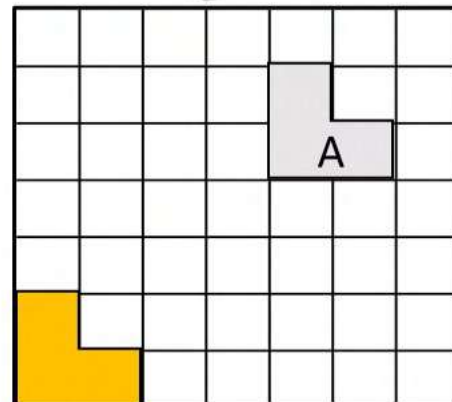
6) _____



7) _____



8) _____

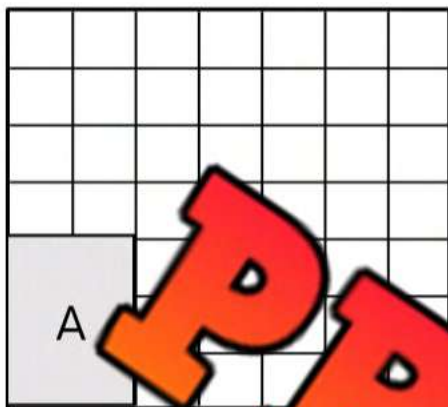
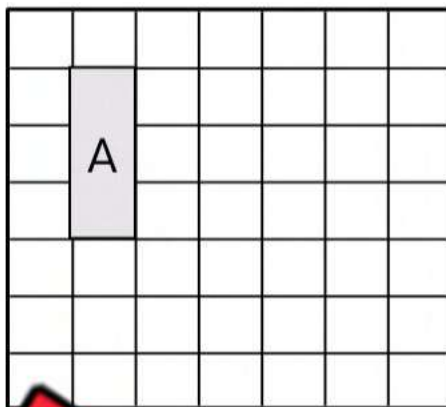
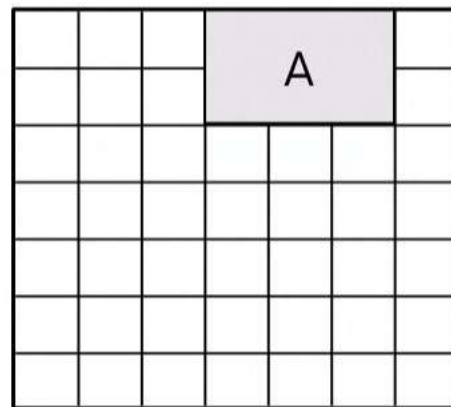
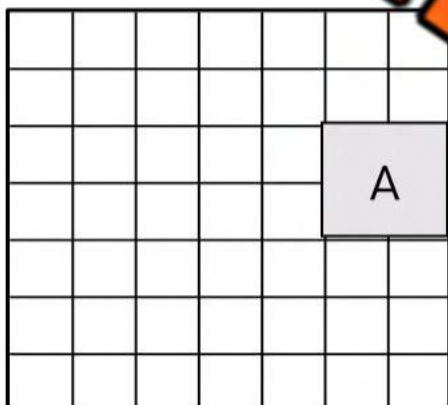
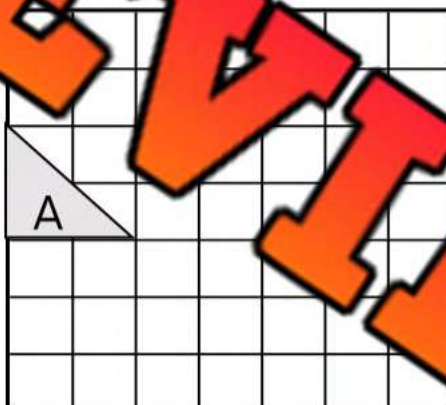
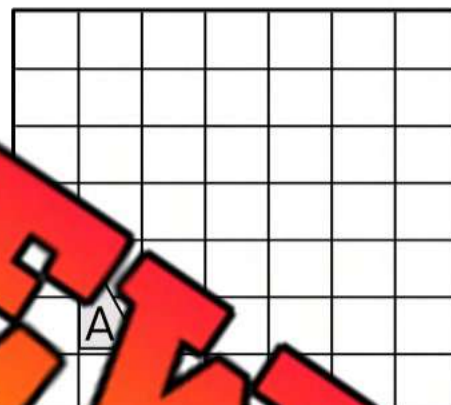
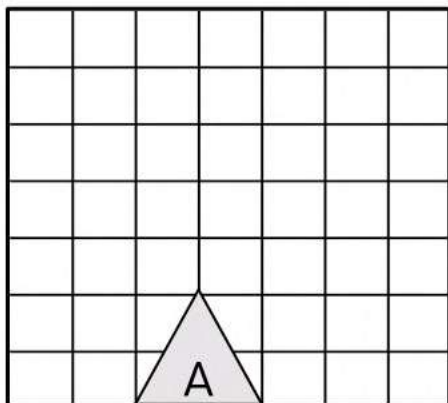
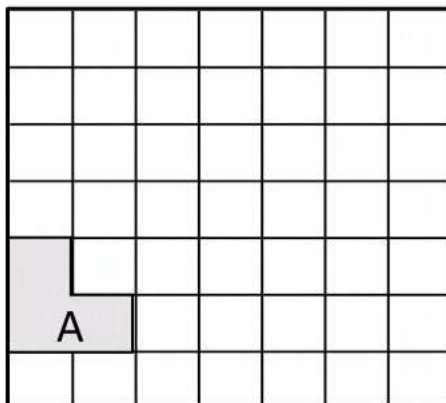
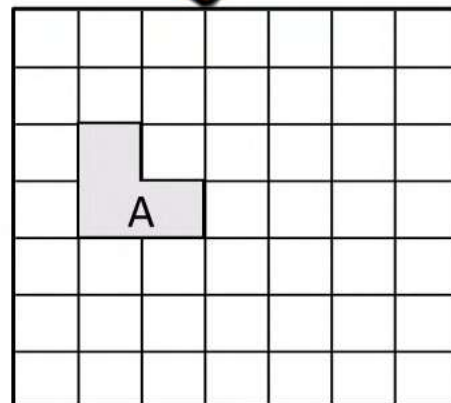


9) _____

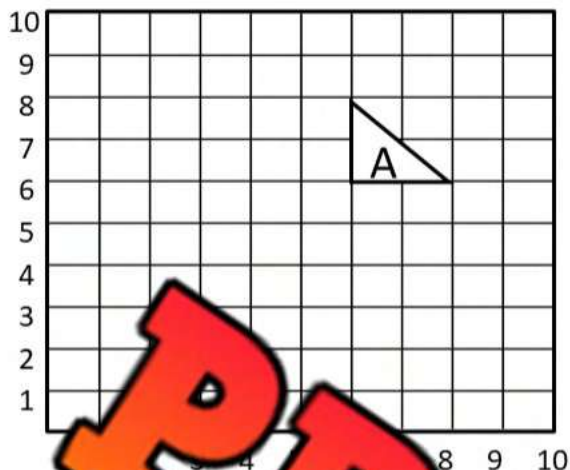
Performing Translations

Instructions

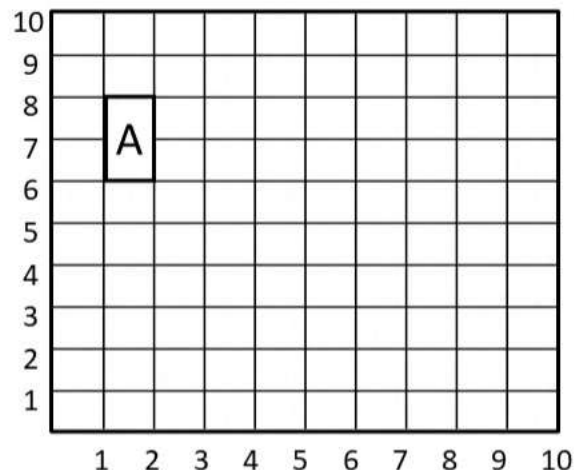
Draw the new shape after reading the 3 steps

1) $3 \uparrow, 4 \rightarrow$  $4 \rightarrow, 1 \downarrow$ 3) $3 \downarrow, 2 \leftarrow, 2 \downarrow$ 4) $3 \downarrow, 4 \leftarrow, 1 \uparrow$ 5) $2 \downarrow, 4 \rightarrow, 3 \uparrow$ 6) $1 \uparrow, 1 \downarrow$ 7) $4 \uparrow, 2 \rightarrow, 3 \leftarrow$ 8) $4 \uparrow, 4 \rightarrow, 5 \downarrow$ 9) $3 \downarrow, 3 \rightarrow, 2 \uparrow$

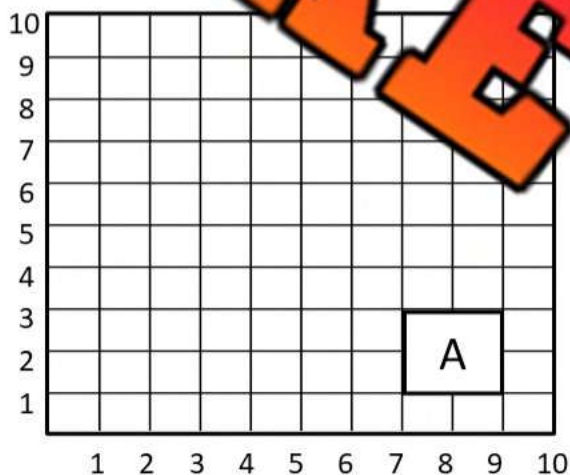
Translating Shapes – Cartesian Plane



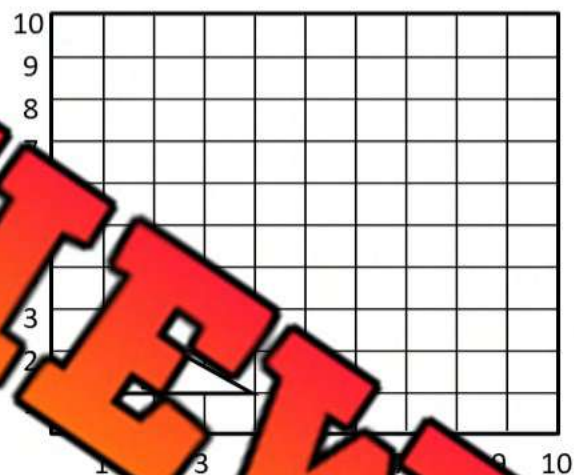
1) Left 6



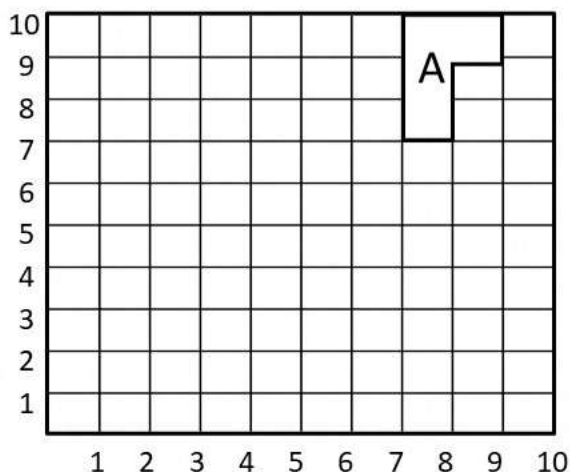
2) Right 5, down 4



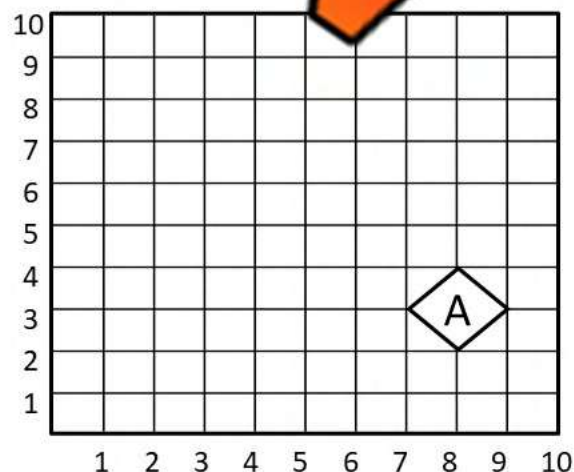
3) Left 6, up 2



4)



5) Left 3, down 6



6) Left 2, up 4

Math Activity: Translation Relay Race

Objective

What are we learning about?

To help students understand and describe translations on a Cartesian plane through a fun and engaging relay race activity.

Materials

What you will need for the activity.

- Graph paper
- Ruler
- Colored pencils/markers
- Pencils and erasers
- Translation task cards



Instructions

How you will complete the activity

1. Explain Translations: Start by explaining translations on the Cartesian plane involve moving shapes without rotating or resizing them.
2. Distribute Materials: Provide each team with graph paper and a set of translation task cards.
3. Form Teams: Divide the class into small teams, each group behind a desk with their graph paper and task cards.
4. Translation Task: The first student in each team picks a translation task card and strategically draws a shape on the grid, ensuring it can fit after the translation.
5. Perform Translation: The student then moves the shape according to the instructions on the task card and draws the new position on the grid.
6. Pass to Next Student: The student then goes to the end of the line, and the next student steps up.
7. Repeat Process: The next student repeats the process: drawing the shape at its new position, selecting a new translation task card, and performing the translation.
8. Continue Relay: Continue the relay until all team members have had a turn or all task cards are used.
9. Verification and Discussion: The teacher verifies the translations, and the class discusses the different translations and observations.

Task Cards

Cut out the cards below

Card 1:Move 2 units $\rightarrow$ and 1 unit $\uparrow$ **Card 6:**Move 2 units $\leftarrow$ and 3 units $\uparrow$ **Card 7:**Move 1 unit $\rightarrow$ and 4 units $\downarrow$ **Card 3:**Move 1 unit $\rightarrow$ and 3 units $\uparrow$ **Card 8:**Move 3 units $\leftarrow$ and 2 units $\uparrow$ **Card 4:**Move 4 units $\rightarrow$ and 2 units $\uparrow$ **Card 9:**Move 2 units $\rightarrow$ and 2 units $\downarrow$ **Card 5:**Move 1 unit $\leftarrow$ and 2 units $\downarrow$ **Card 10:**Move 1 unit $\leftarrow$ and 3 units $\uparrow$

Task Cards

Cut out the task cards below

Card 11:Move 4 units $\rightarrow$ and 1 unit $\downarrow$ **Card 16:**Move 2 units $\leftarrow$ and 2 units $\uparrow$ **Card 17:**Move 2 units $\rightarrow$ and 3 units $\downarrow$ **Card 13:**Move 3 units $\rightarrow$ and 2 units $\downarrow$ **Card 18:**Move 5 units $\rightarrow$ and 2 units $\downarrow$ **Card 14:**Move 3 units $\leftarrow$ and 5 units $\uparrow$ **Card 19:**Move 5 units $\rightarrow$ and 4 units $\downarrow$ **Card 15:**Move 4 units $\rightarrow$ and 3 units $\uparrow$ **Card 20:**Move 5 units $\leftarrow$ and 1 unit $\uparrow$

Name: _____

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Curriculum Connection
SS6.5

Grid Paper

1 x 1 cm grid paper

PREVIEW

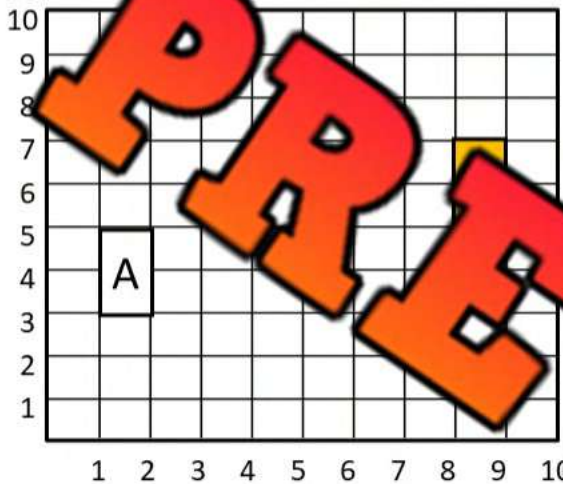
Exit Cards

Cut Out

Cut out the exit cards below and have students complete them at the end of class

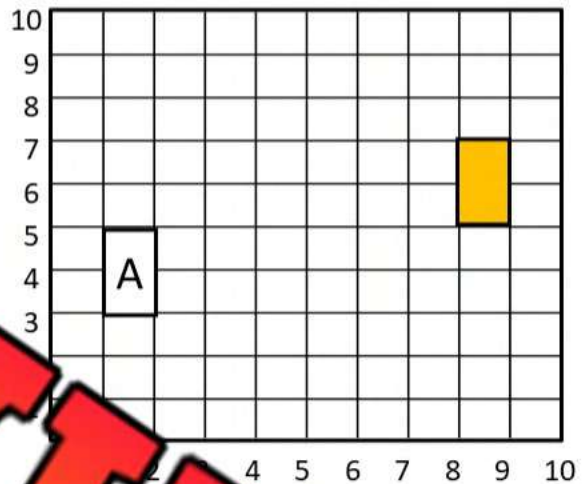
Name: _____

Describe the translations below. Shape A is the original shape.



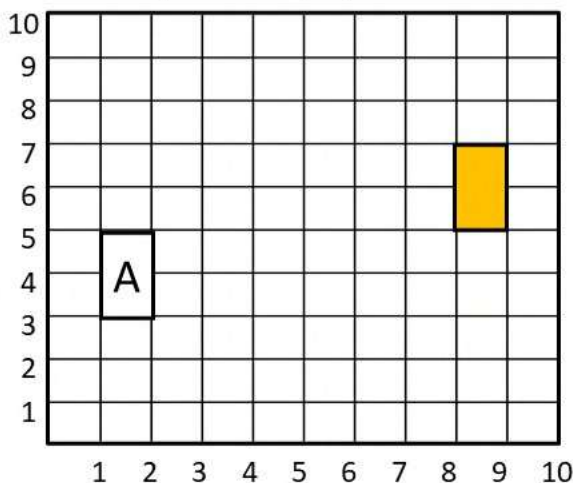
Name: _____

Describe the translations below. Shape A is the original shape.



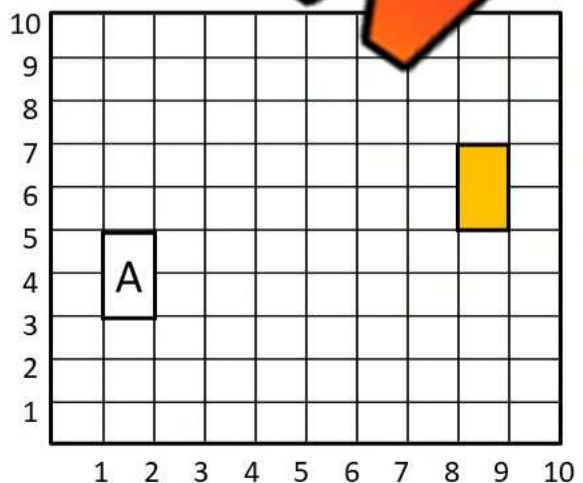
Name: _____

Describe the translations below. Shape A is the original shape.

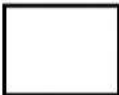
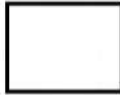
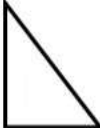
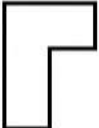


Name: _____

Describe the translations below. Shape A is the original shape.

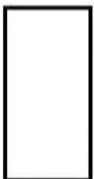
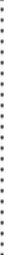
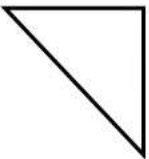
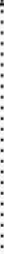
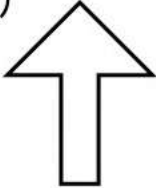
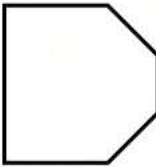
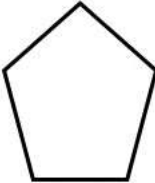


Reflection or Not?**Part 1**Is the transformation a reflection? Yes or no?

1)   	2)   	3)  
4)   	5)   	6)  
7)   	8)   	9)  

Part 2

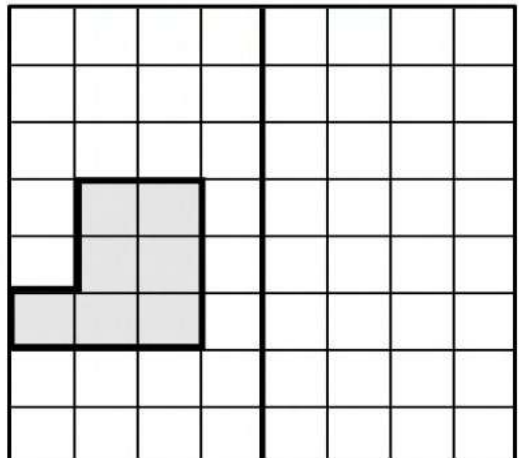
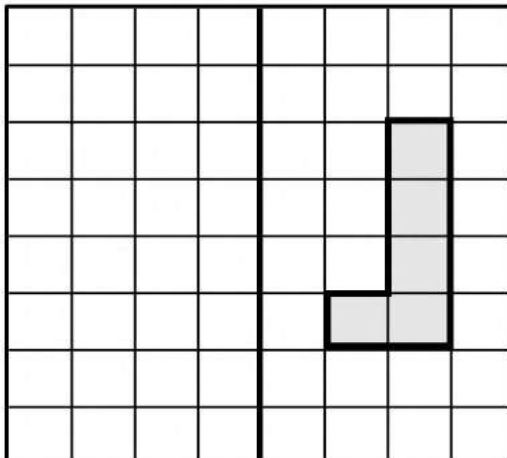
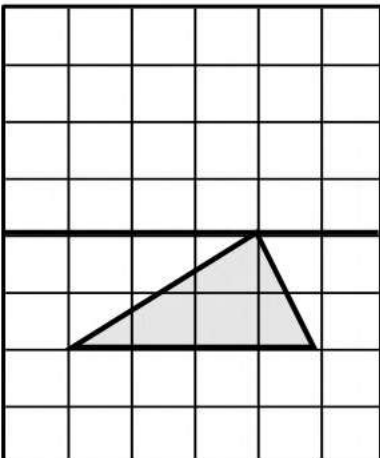
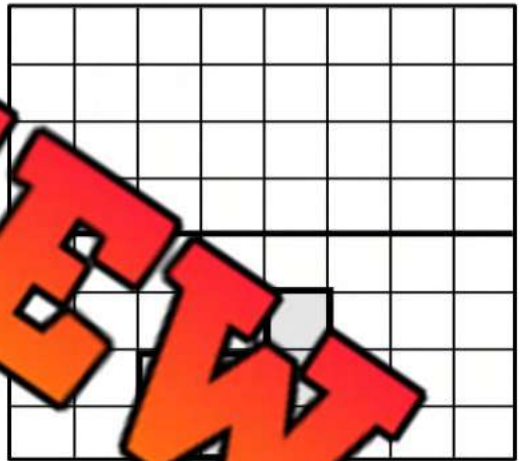
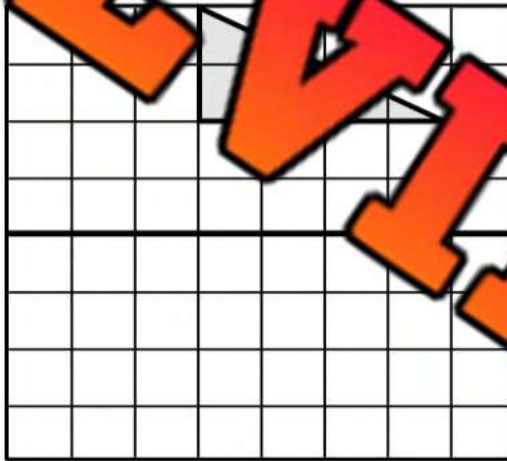
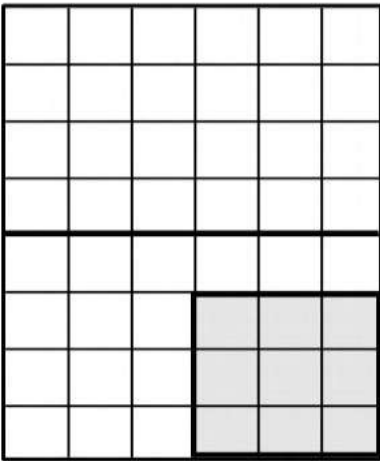
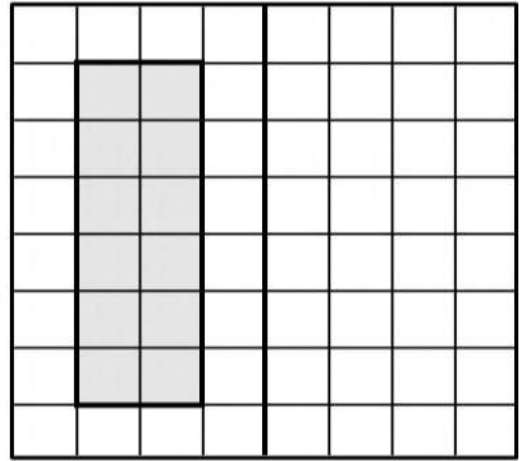
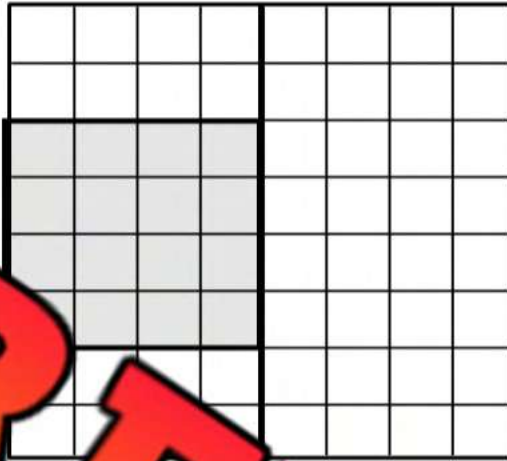
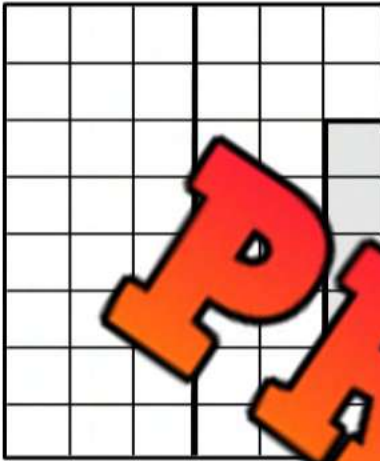
Draw the shape across the reflection line.

1)  	2)  	3)  
4)  	5)  	6)  
7)  	8)  	9)  

Drawing Reflections

Questions

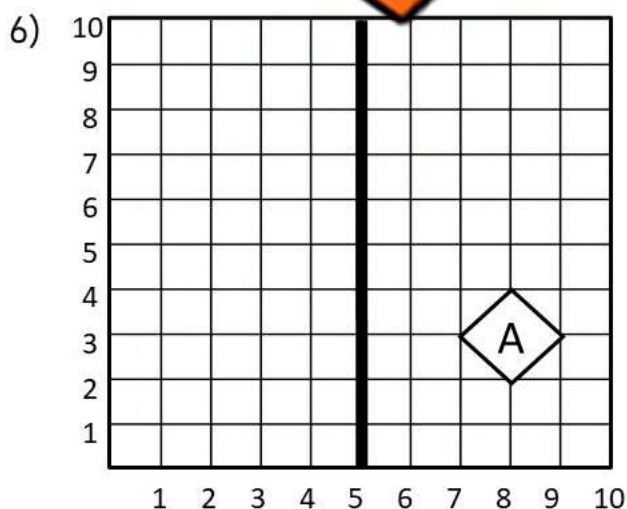
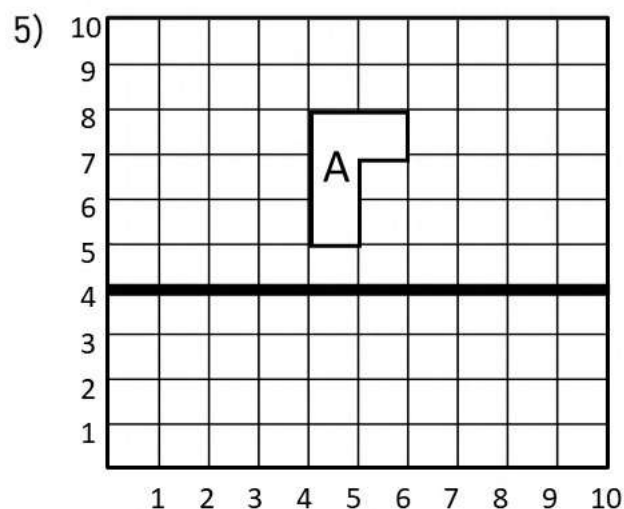
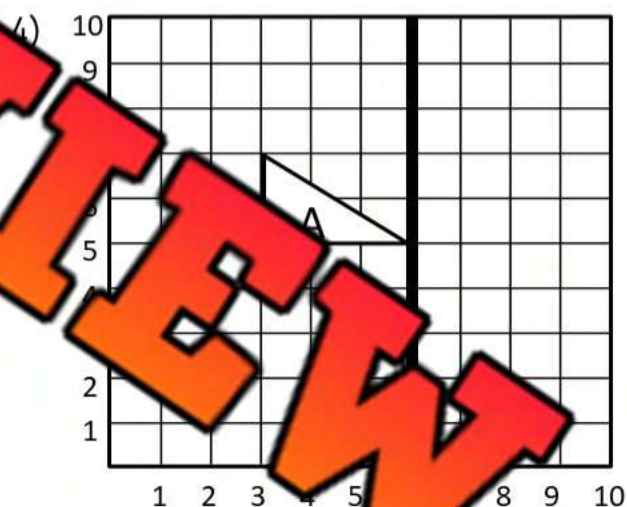
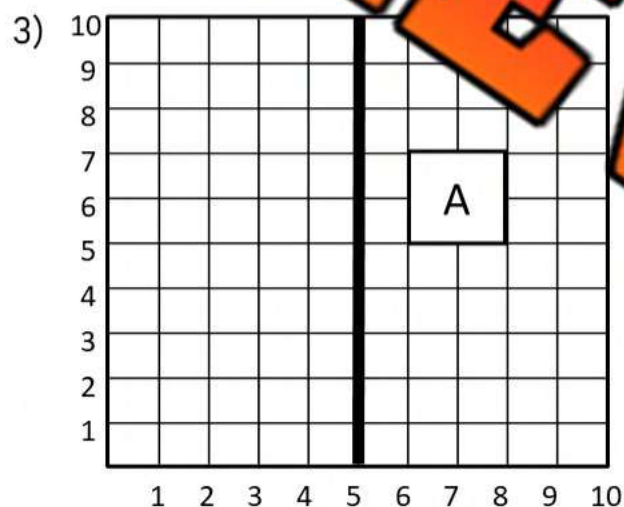
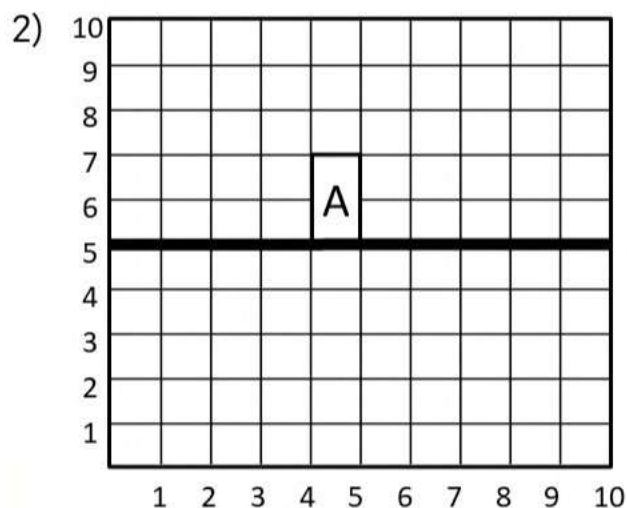
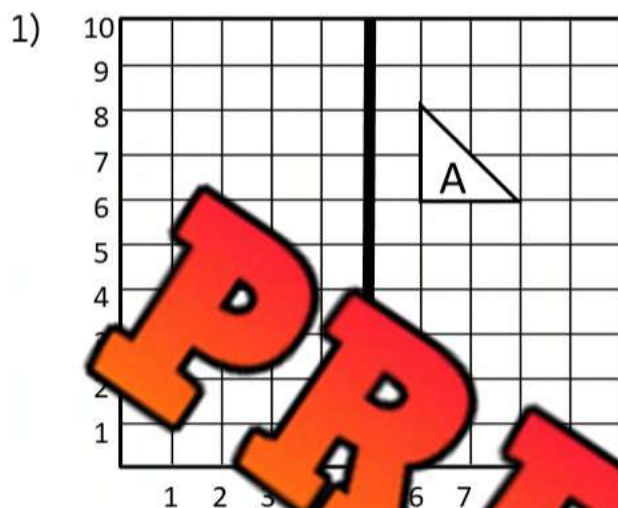
Reflect the shapes across the mirror line



Reflecting Shapes – Cartesian Plane

Instructions

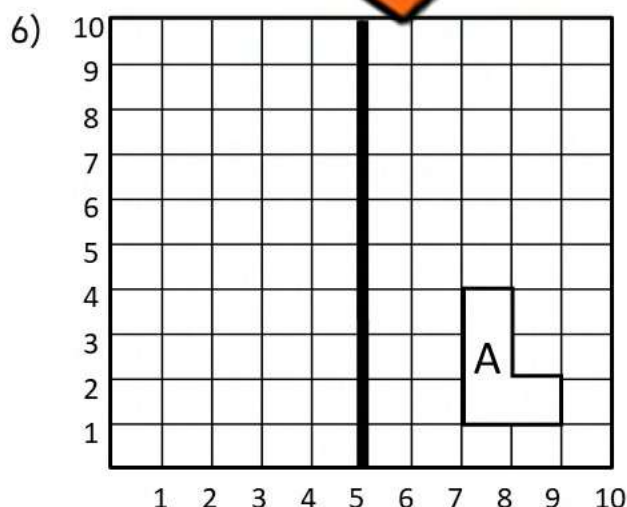
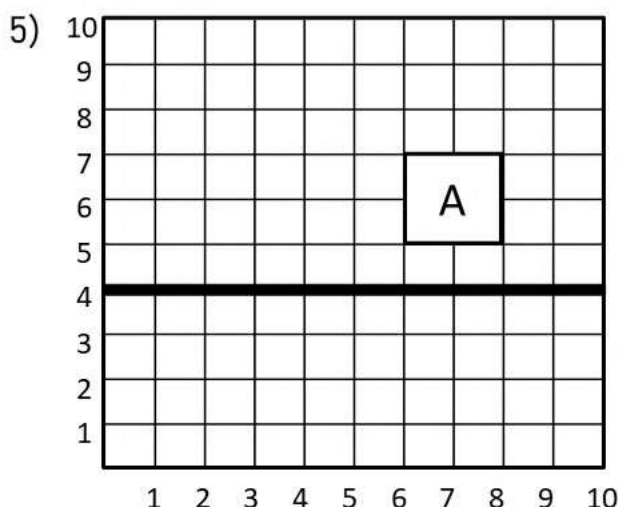
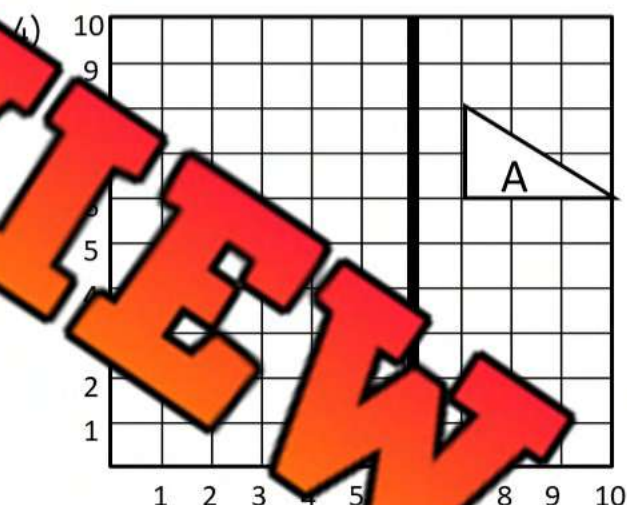
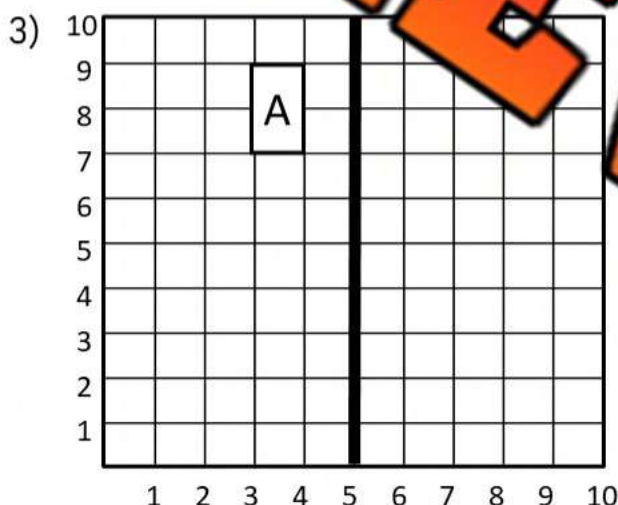
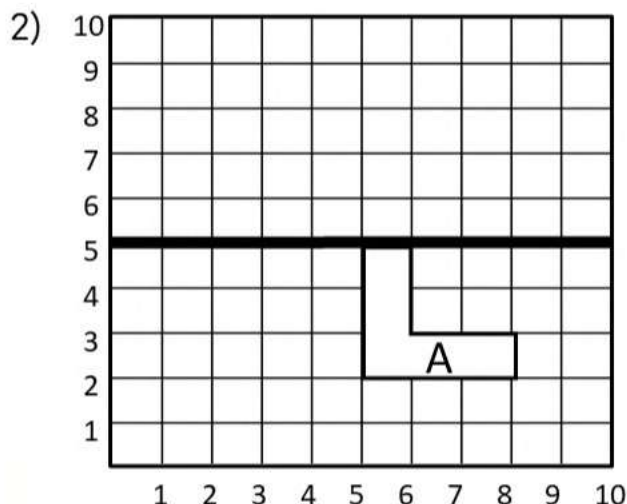
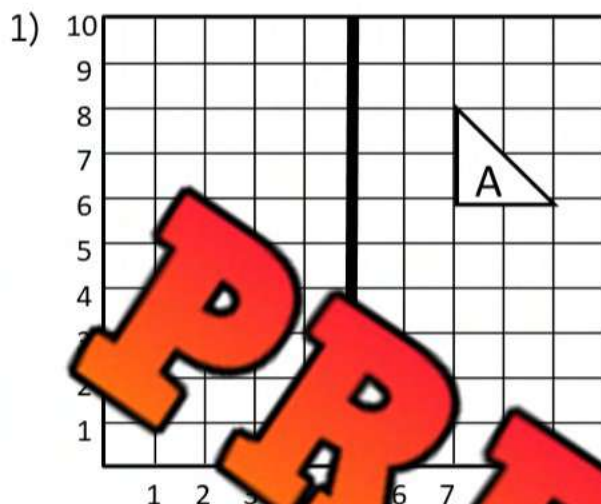
Reflect the shapes across the mirror line



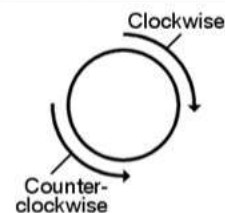
Reflecting Shapes – Cartesian Plane

Instructions

Reflect the shapes across the mirror line



Clockwise and Counterclockwise Rotations



Instruction

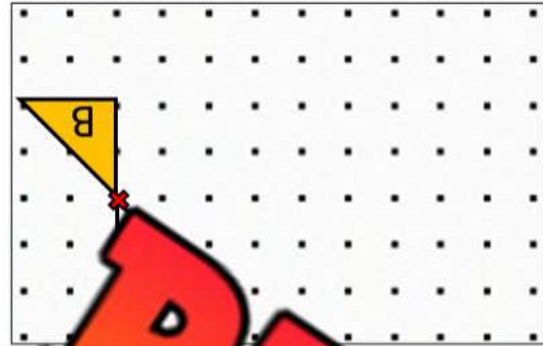
Draw the controller after it has been rotated

1)		Clockwise 180° rotation	
2)		Counterclockwise 90° rotation	
3)		Clockwise 90° rotation	
4)		Counterclockwise 360° rotation	
5)		Clockwise 360° rotation	
6)		Counterclockwise 180° rotation	

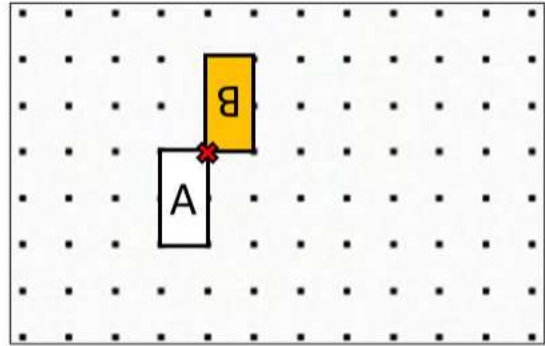
Describing Rotations

Instructions

Describe the rotations. Shape A is the original shape.



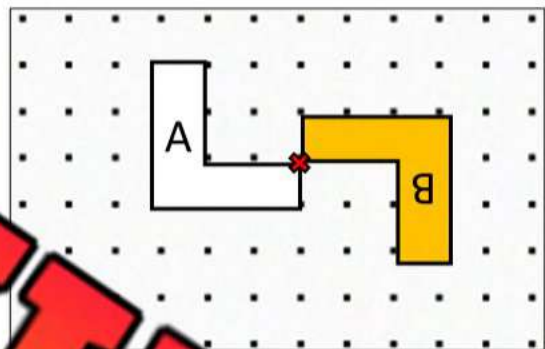
1) _____



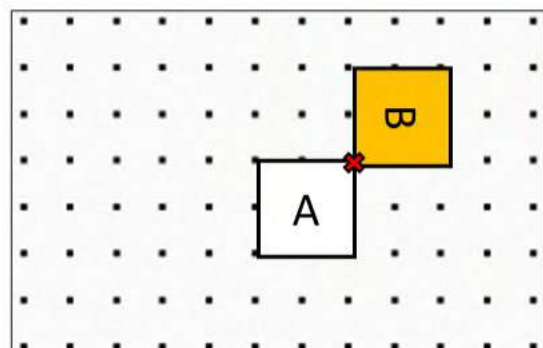
2) _____



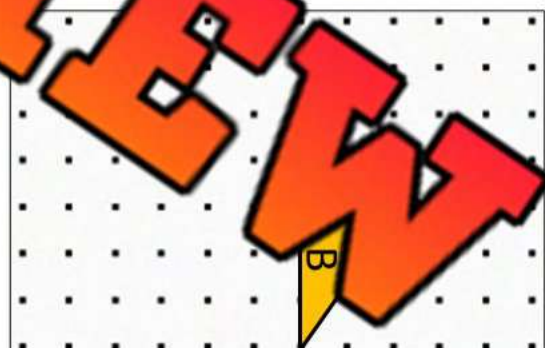
3) _____



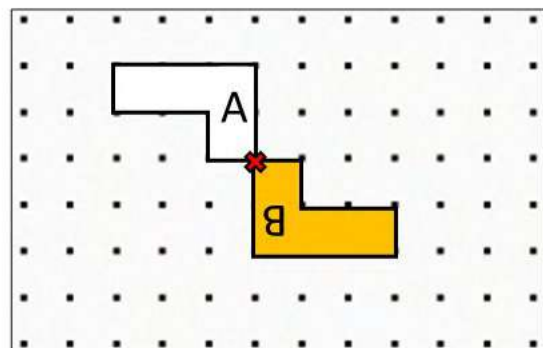
4) _____



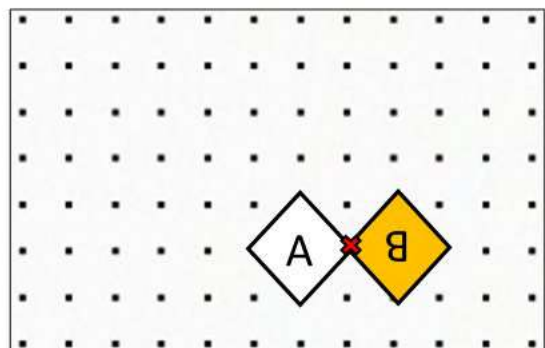
5) _____



6) _____

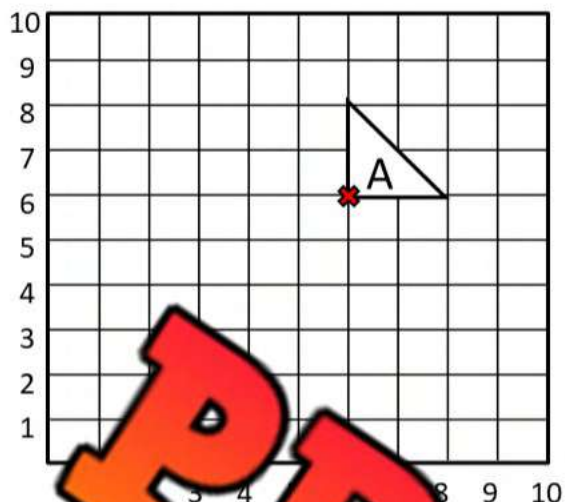


7) _____

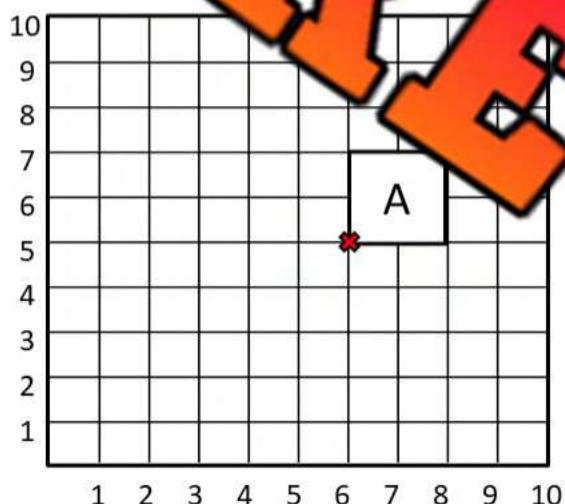


8) _____

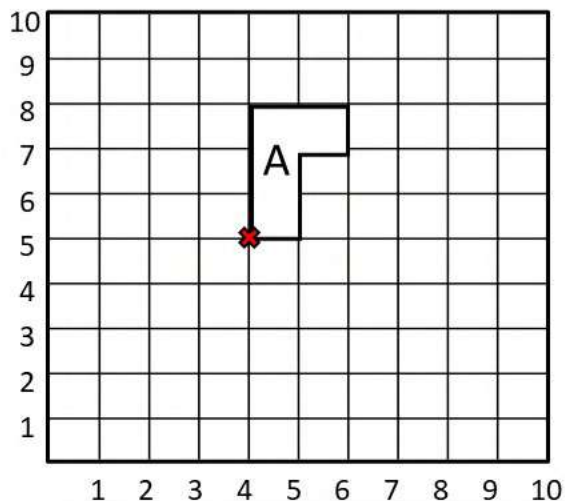
Rotating Shapes - Cartesian Plane



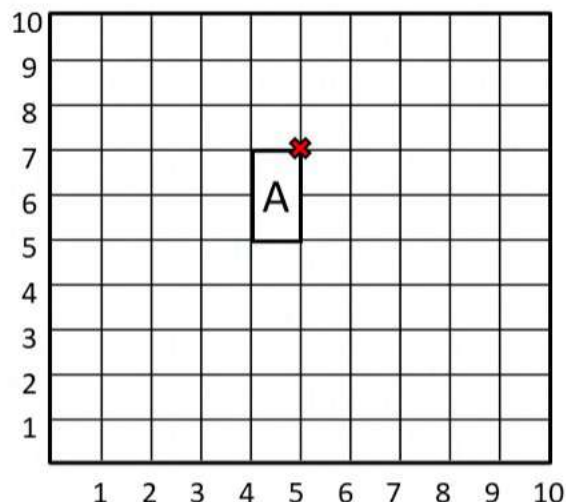
1) 180° rotation



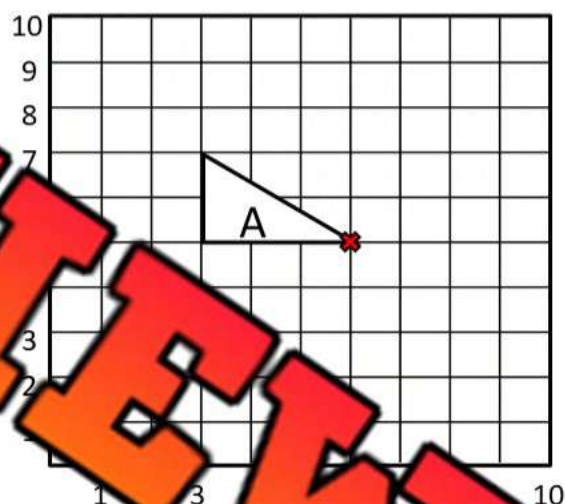
3) 90° clock-wise rotation



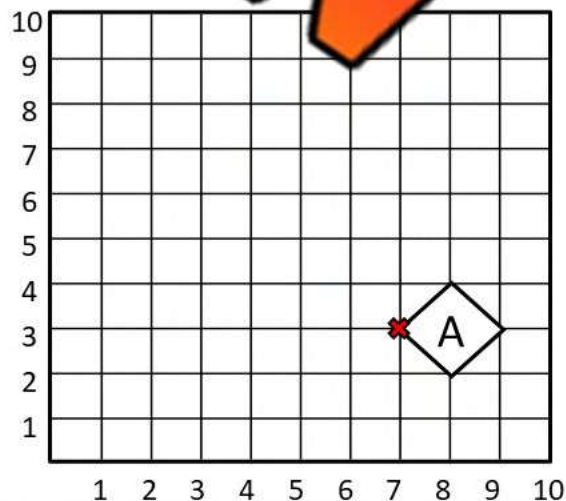
5) 180° rotation



2) 90° counter-clockwise rotation

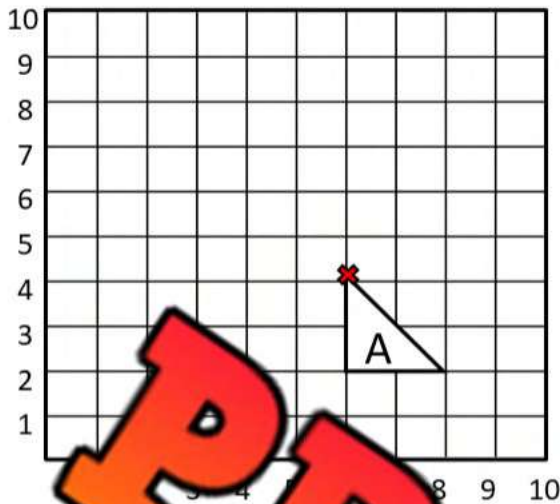


4) 90° counter-clockwise rotation

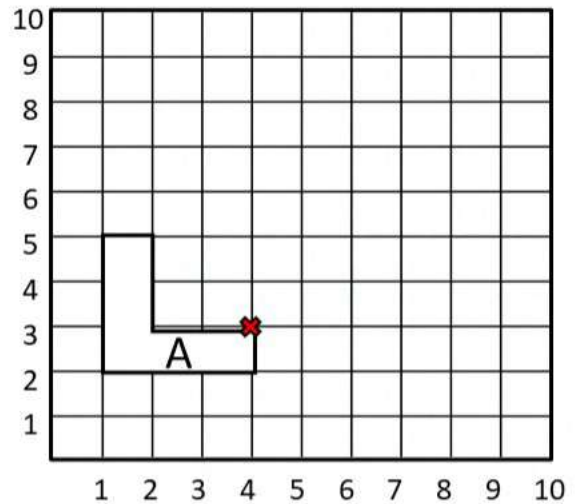


6) 90° counter-clockwise rotation

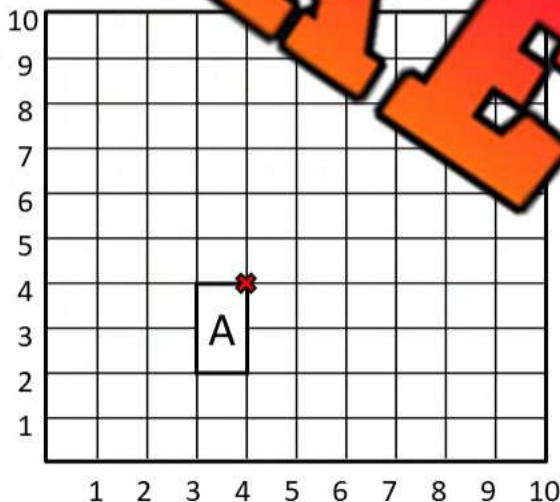
Rotating Shapes - Cartesian Plane



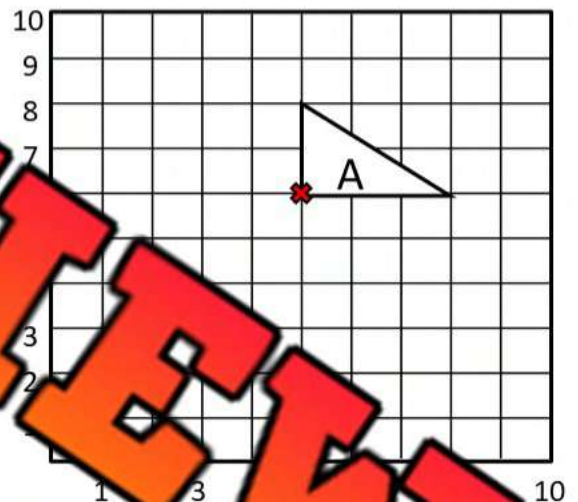
1) 90° counter-clockwise rotation



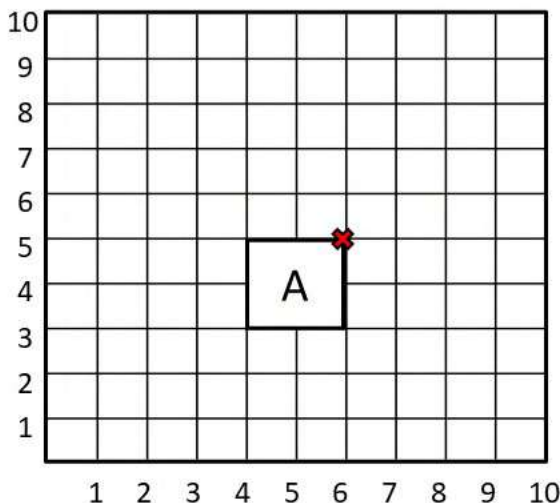
2) 180° rotation



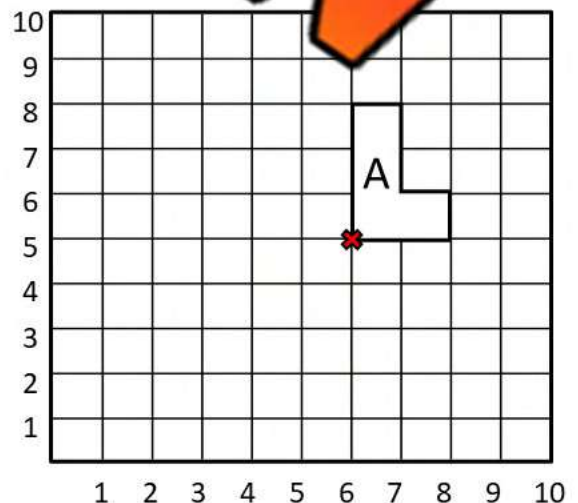
3) 360° clock-wise rotation



4) 90° clockwise rotation



5) 180° rotation



6) 90° counter-clockwise rotation

Exit Cards

Cut Out

Cut out the exit cards below and have students complete them at the end of class

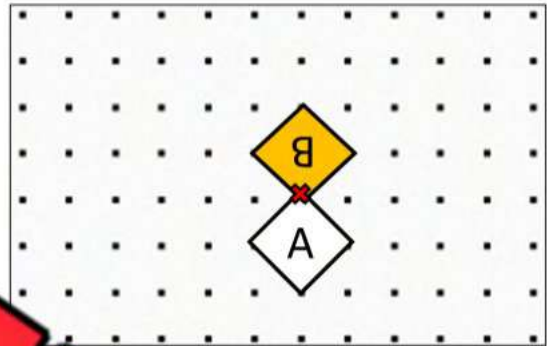
Name: _____

Describe the rotations. Shape A is the original shape.



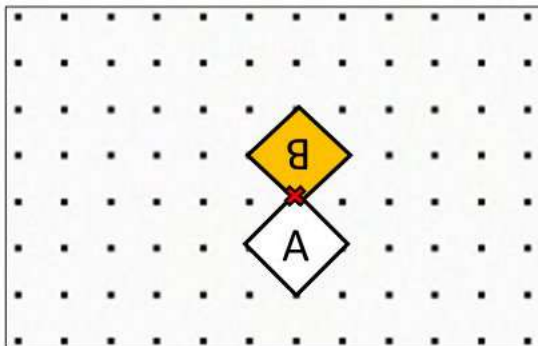
Name: _____

Describe the rotations. Shape A is the original shape.



Name: _____

Describe the rotations. Shape A is the original shape.



Name: _____

Describe the rotations. Shape A is the original shape.

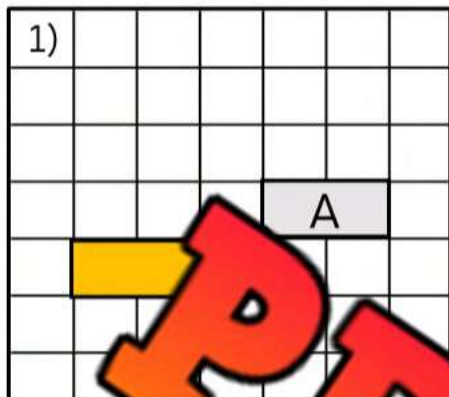


Transformations - Congruency

Instructions

Are the shapes congruent? Which transformation is it?

1)

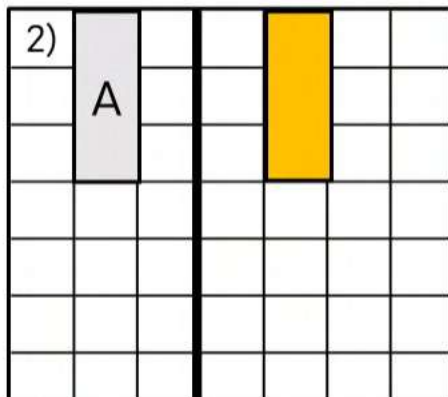


Congruent

Yes

Type

2)

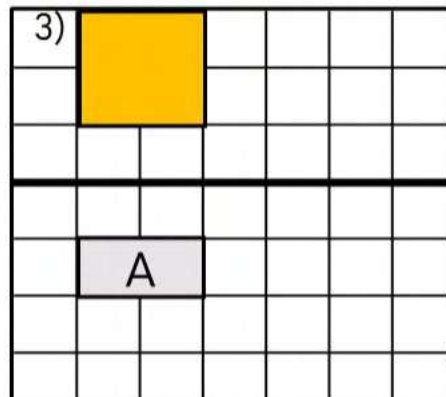


Congruent

Yes

No

3)



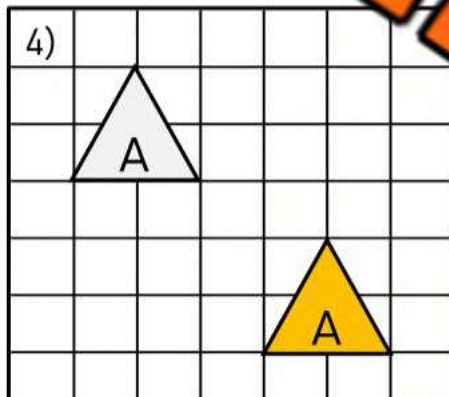
Congruent

Yes

No

Type

4)



Congruent

Yes

No

Type

5)



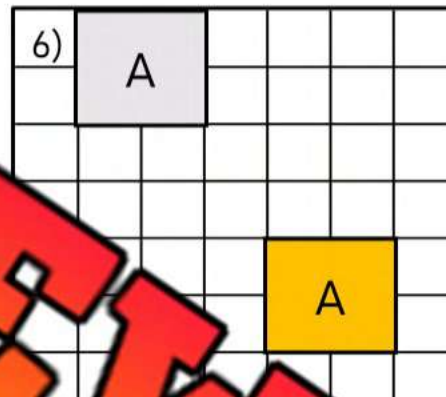
Congruent

Yes

No

Type

6)

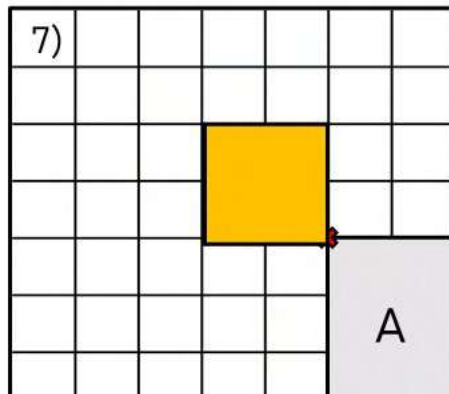


Congruent

No

Type

7)



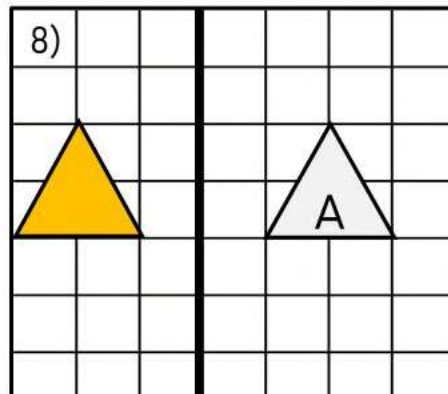
Congruent

Yes

No

Type

8)



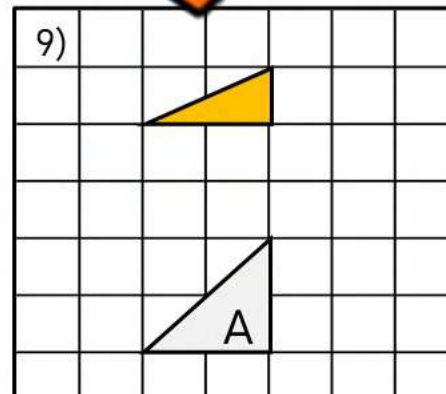
Congruent

Yes

No

Type

9)



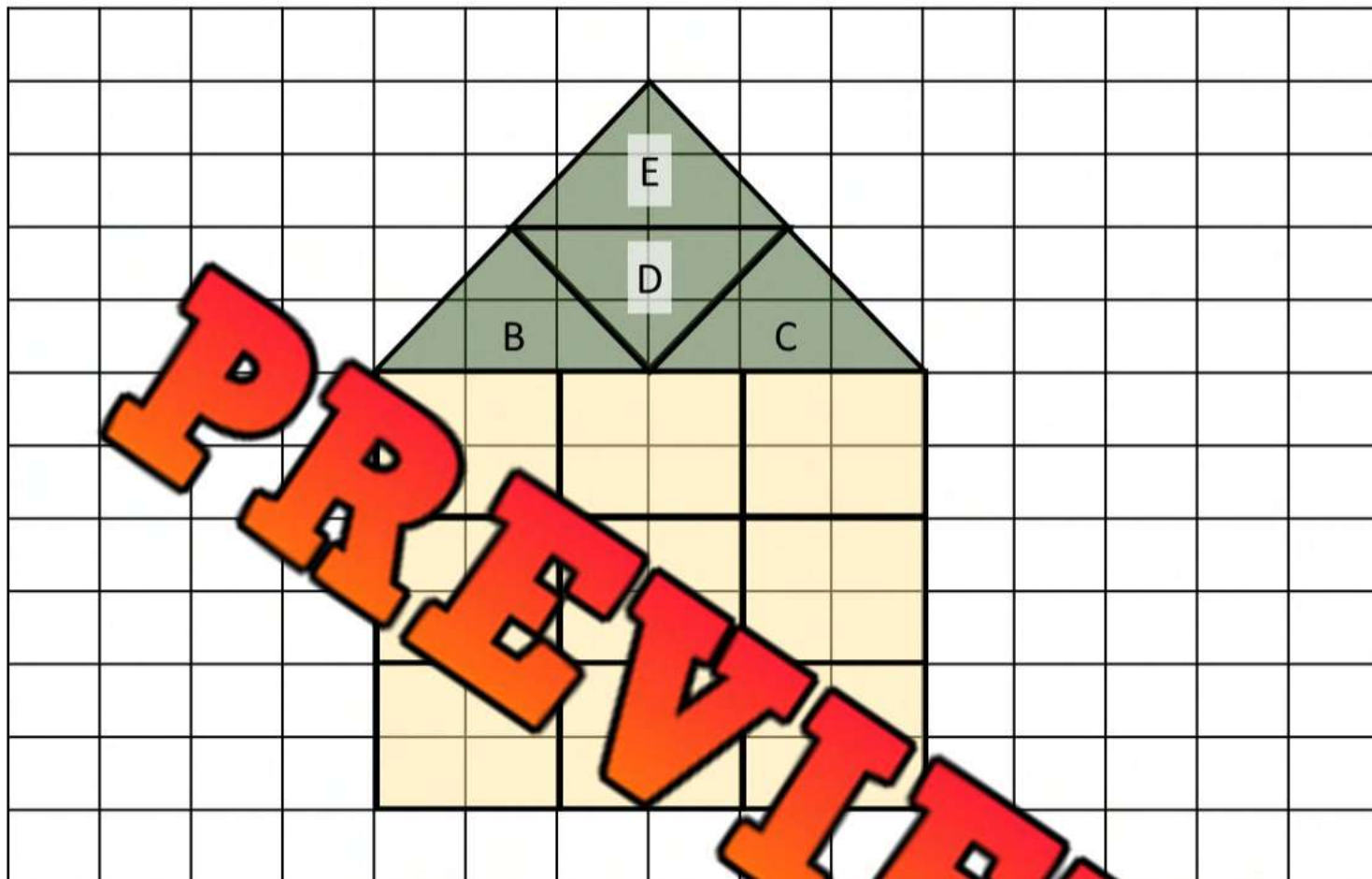
Congruent

Yes

No

Type

Describing Transformations in a Design



Questions

Answer the questions below

- 1) Which shape is A?
- 2) Which transformation was used with shape A?
- 3) What is the name of shapes B, C, D, and E?
- 4) Which transformation was used to move shape B to C?
- 5) Which two transformations were used to move shape C to D?
- 6) Which transformation was used to move shape D to E?

1) _____

2) _____

Create a Design Using Transformations

Instructions

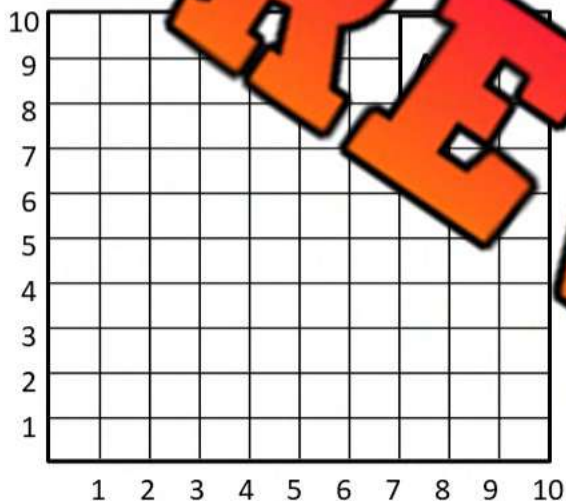
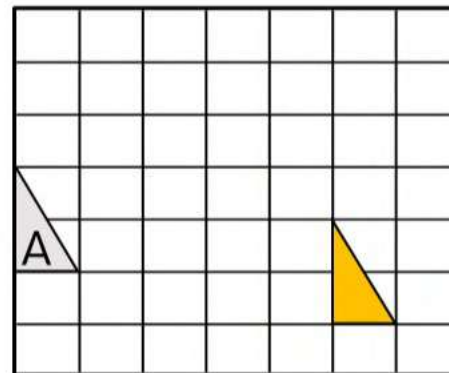
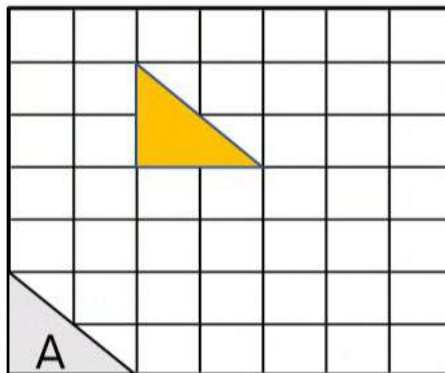
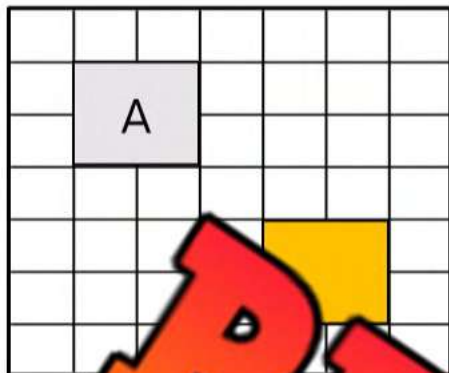
- 1) Transform copies of the shape below to create a design
- 2) Describe the transformations at the bottom of the page

**Description**

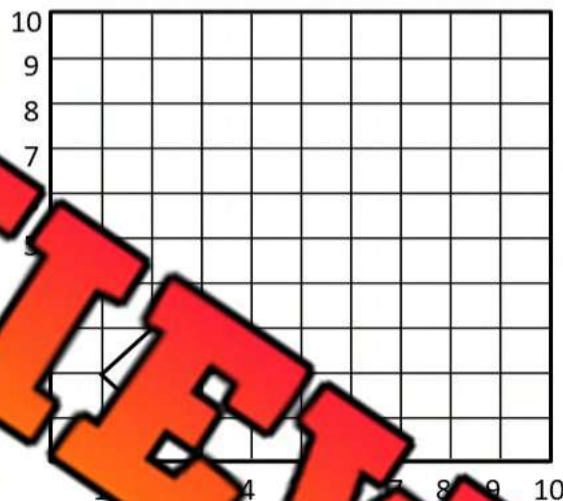
Describe which transformations you performed to make your design

Unit Quiz - Transformations**Part 1**

Describe or perform the translations below



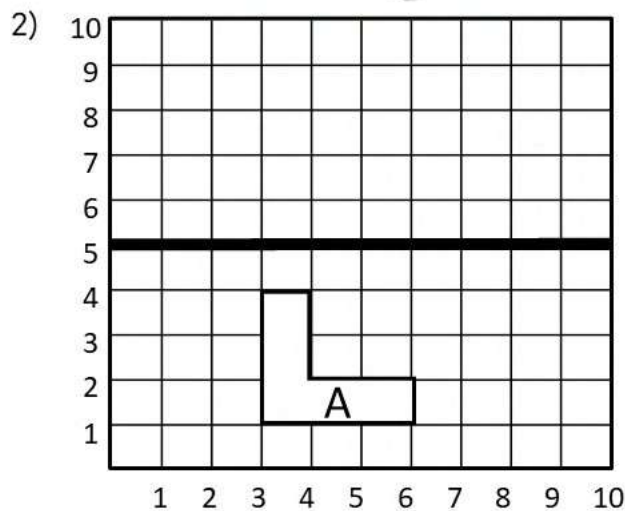
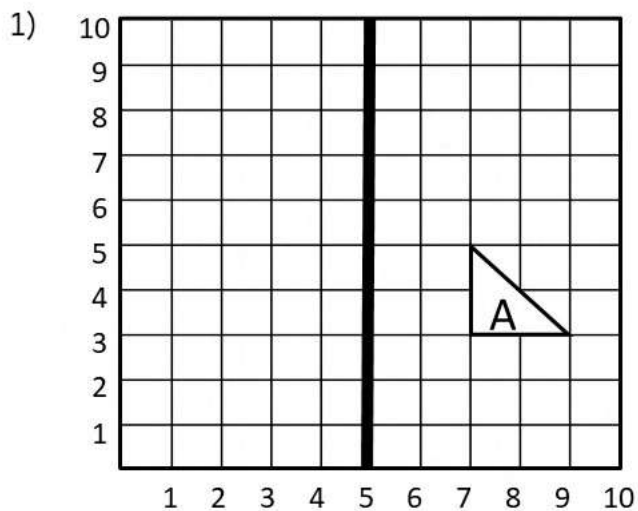
Left 4, down 5



Right

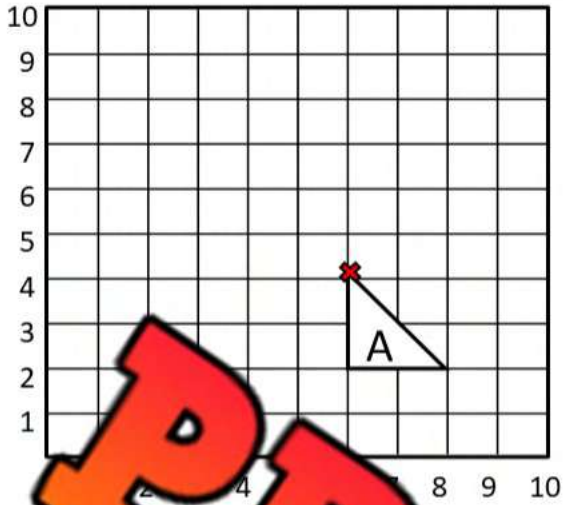
Part 2

Reflect the shapes across the mirror line

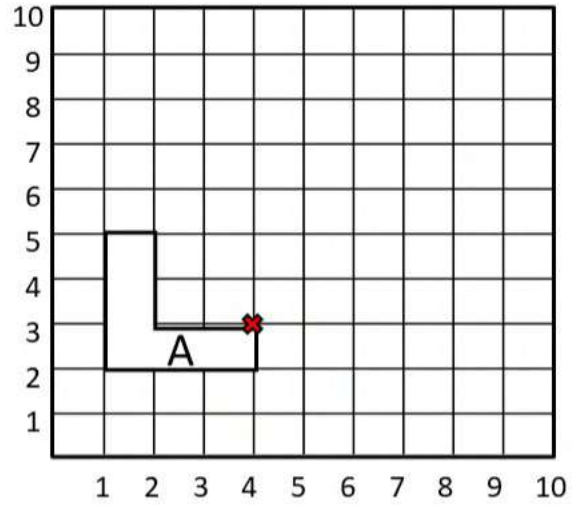


Part 3

Perform the rotations



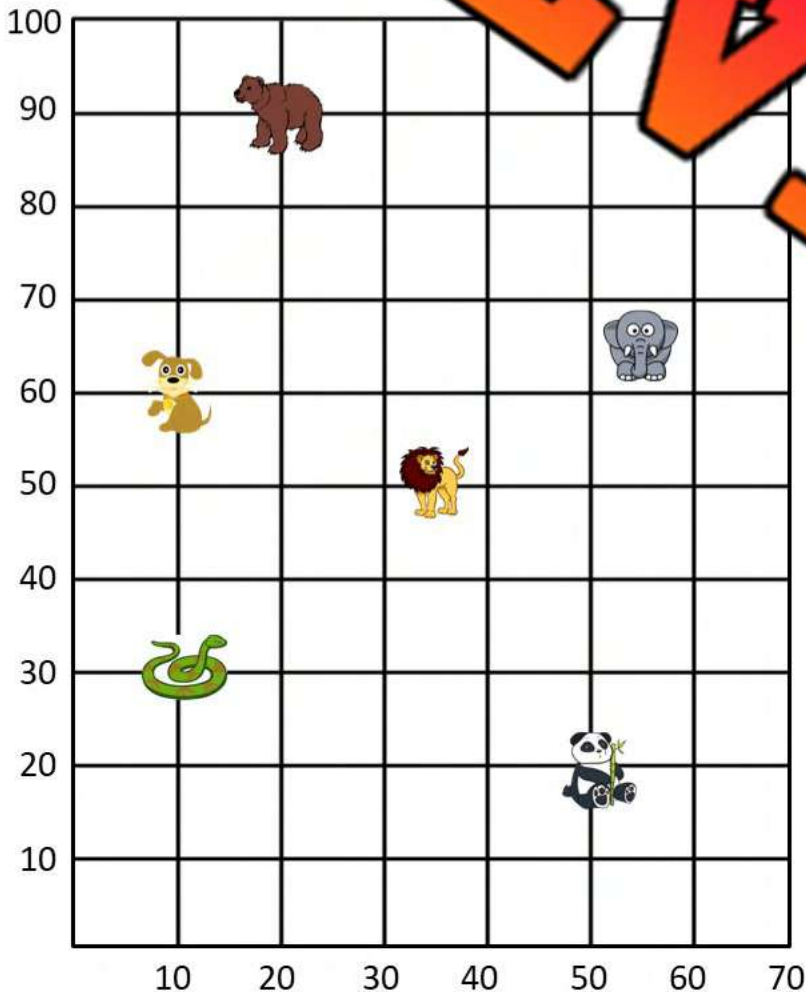
90° counter-clockwise rotation



180° rotation

Part 4

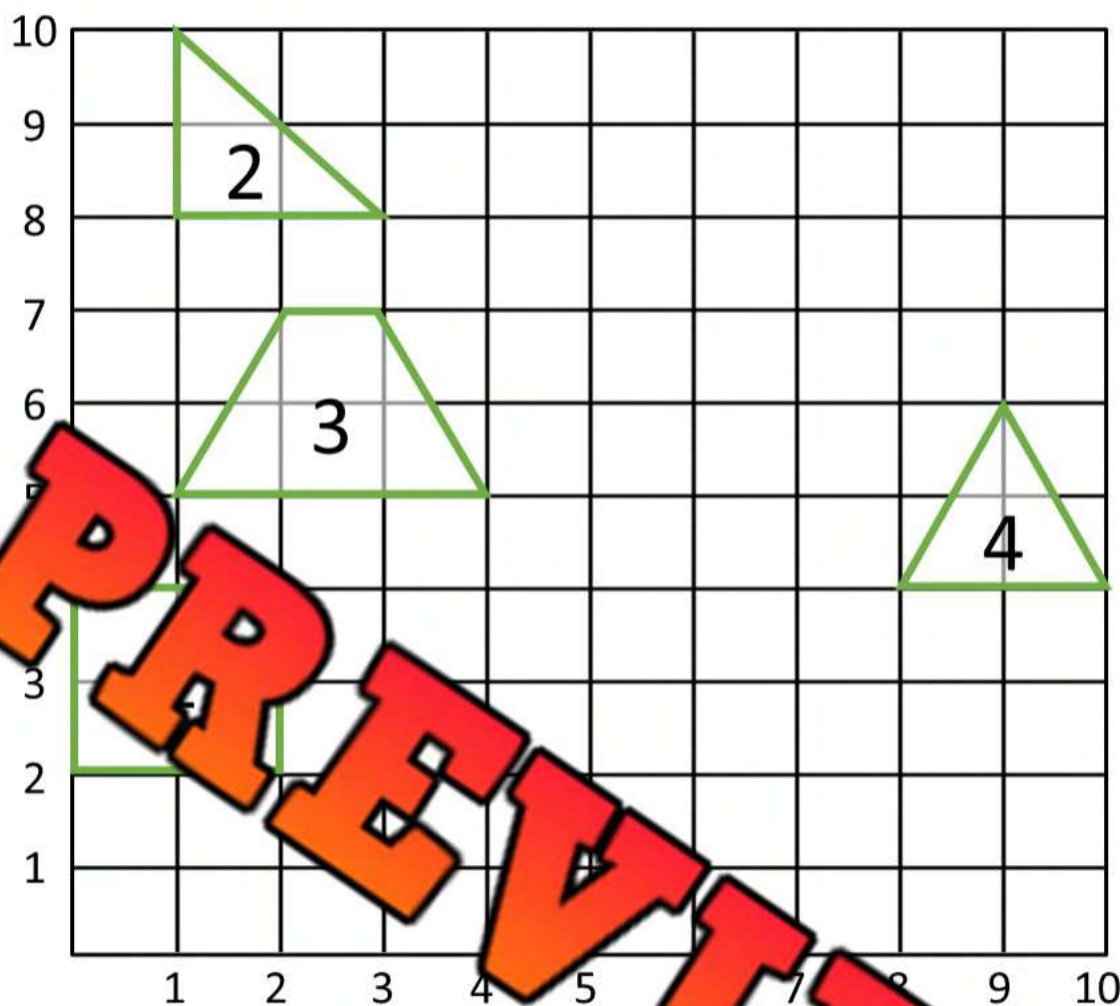
Use the grid to answer the questions below



Symbol	Coordinates
	(____, ____)
	(____, ____)
	(____, ____)
	(____, ____)
	(____, ____)

2. Write the letters on the grid

Letter	Coordinates
A	(30, 10)
B	(15, 45)
C	(65, 80)



Part 5

Follow the instructions below

1) Write the coordinates for each Polygon

Polygon	Coordinates
1	
2	
3	
4	

2) Draw the polygons with the coordinates

Polygon	Coordinates
5	(7, 8), (8, 7), (9, 8), (8, 9)
6	(7, 0), (9, 0), (9, 2)
7	(4, 6), (4, 10), (6, 6), (6, 10)
8	(3, 0), (4, 2), (5, 0), (6, 2)