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Google Slides Lessons Preview





Manitoba Math Curriculum Shape & Space – Grade 6

3-Part Lesson Format

Part 1 – Minds On!

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

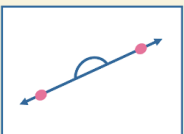
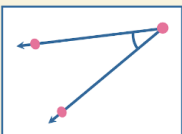
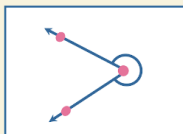
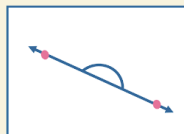
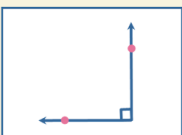
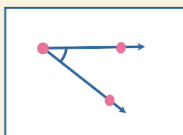
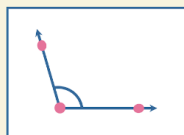
Learning Goal

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.



Angles

Drag and label the angles.



Right Angle

Acute Angle

Obtuse Angle

Reflex Angle

Straight Angle

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?





Manitoba Math Curriculum Shape & Space – Grade 6

Interior Angles - Quadrilaterals

Drag the numbers to fill in the values of the unknown angle measurements.

					1	2	3	4	5
					6	7	8	9	0
1) ∠A = _____°	2) ∠B = _____°	3) ∠C = _____°	4) ∠D = _____°	5) ∠E = _____°					
6) ∠F = _____°	7) ∠G = _____°	8) ∠H = _____°	9) ∠I = _____°	10) ∠J = _____°					

 $3\text{cm} + 3\text{cm} + 3\text{cm} + 3\text{cm} = \underline{\hspace{2cm}} \text{cm}$	 $1\text{cm} + 1\text{cm} + 1\text{cm} + 1\text{cm} = \underline{\hspace{2cm}} \text{cm}$	 $10\text{cm} + 10\text{cm} + 10\text{cm} + 10\text{cm} = \underline{\hspace{2cm}} \text{cm}$
 $4\text{cm} + 4\text{cm} + 4\text{cm} + 4\text{cm} = \underline{\hspace{2cm}} \text{cm}$	 $6\text{cm} + 6\text{cm} + 6\text{cm} + 6\text{cm} = \underline{\hspace{2cm}} \text{cm}$	

Use the formula to find the area of the shape to complete the equations.

 $A = l \times w$ $A = \underline{\hspace{1cm}} \times \underline{\hspace{1cm}}$ $A = \underline{\hspace{1cm}} \text{ units}^2$	 $A = l \times w$ $A = \underline{\hspace{1cm}} \times \underline{\hspace{1cm}}$ $A = \underline{\hspace{1cm}} \text{ units}^2$	 $A = l \times w$ $A = \underline{\hspace{1cm}} \times \underline{\hspace{1cm}}$ $A = \underline{\hspace{1cm}} \text{ units}^2$
 $A = l \times w$ $A = \underline{\hspace{1cm}} \times \underline{\hspace{1cm}}$ $A = \underline{\hspace{1cm}} \text{ units}^2$	 $A = l \times w$ $A = \underline{\hspace{1cm}} \times \underline{\hspace{1cm}}$ $A = \underline{\hspace{1cm}} \text{ units}^2$	 $A = l \times w$ $A = \underline{\hspace{1cm}} \times \underline{\hspace{1cm}}$ $A = \underline{\hspace{1cm}} \text{ units}^2$



Manitoba Math Curriculum Shape & Space – Grade 6

Finding the Missing Information - Visuals

Find the missing piece of information.

cm ²	1	2	3	4	5	6	7	8	9	0
A=12cm ² 4cm	Base = _____ Height = _____ Area = _____		A=6cm ² 3cm	Base = _____ Height = _____ Area = _____		A=35cm ² 7cm	Base = _____ Height = _____ Area = _____			
A=18cm ² 2cm	Base = _____ Height = _____ Area = _____		A=40cm ² 5cm	Base = _____ Height = _____ Area = _____		A=60cm ² 6cm	Base = _____ Height = _____ Area = _____			

Calculating Area and Volume

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

1)	2)	3)
Area of Base Height Volume	Area of Base Height Volume	Area of Base Height Volume

4)	5)	6)
Area of Base Height Volume	Area of Base Height Volume	Area of Base Height Volume

Angles

Use Straight

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



Workbook Preview



Grade 6

SHAPE AND SPACE

General Outcome (SS.1 – SS.3)

Use direct or indirect measurement to solve problems.

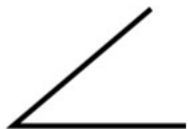
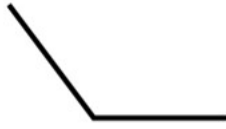
	Curriculum Expectations	Pages That Cover the Expectations
SS.1	• Demonstrate an understanding of angles by: • identifying examples of angles in the environment • classifying angles according to their measure • estimating the measure of angles, using 45°, 90°	3 – 28
Preview of 50 pages from this product that contains 227 pages total.		
SS.2	• 180° in a triangle • 360° in a quadrilateral.	29 – 33
SS.3	Develop and apply a formula for determining the: • perimeter of polygons • area of rectangles • volume of right rectangular prisms	36 – 57

Name: _____

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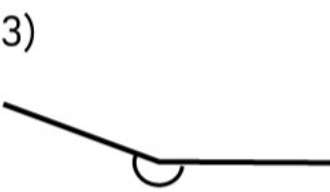
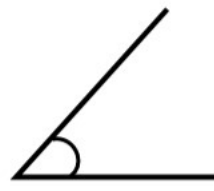
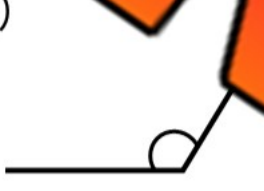
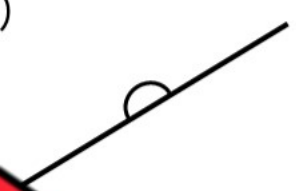
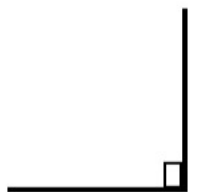
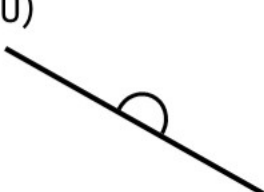
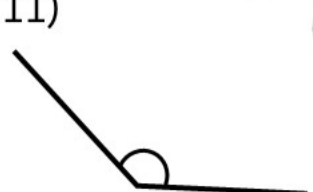
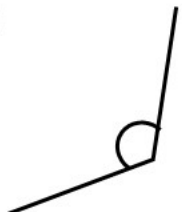
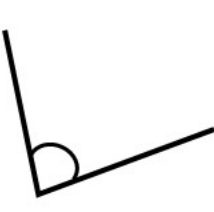
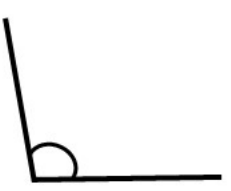
Curriculum Connection
SS.1

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°
				

Question

Label the angle - straight, acute, obtuse, right, or reflex

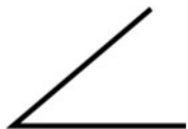
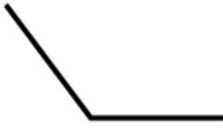
1) 	2) 	3) 	4) 
5) 	6) 	7) 	8) 
9) 	10) 	11) 	12) 
13) 	14) 	15) 	16) 

Name: _____

6

Curriculum Connection
SS.1

Drawing Angles - Right, Obtuse, Acute, and Reflex

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

Question

Draw acute, obtuse, right, and reflex angles below

1)	2)	3)	4)
Acute	Obtuse	Right	Reflex
5)	6)	7)	8)
Reflex	Obtuse	Acute	Straight
9)	10)	11)	12)
Right	Acute	Obtuse	Reflex

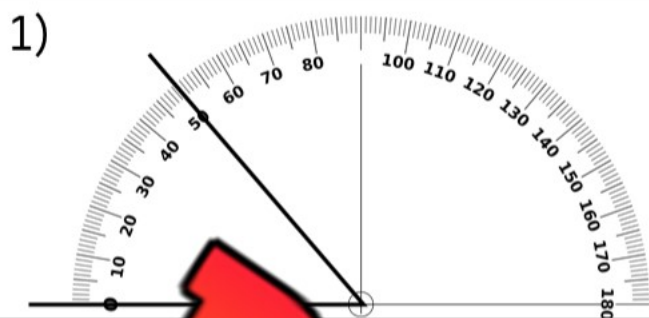
Name: _____

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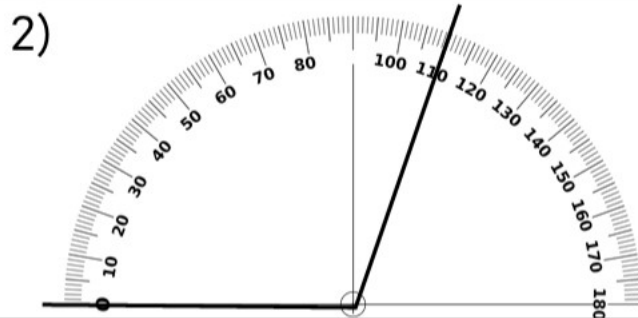
Curriculum Connection
SS.1

Measuring Angles - Printed Protractor

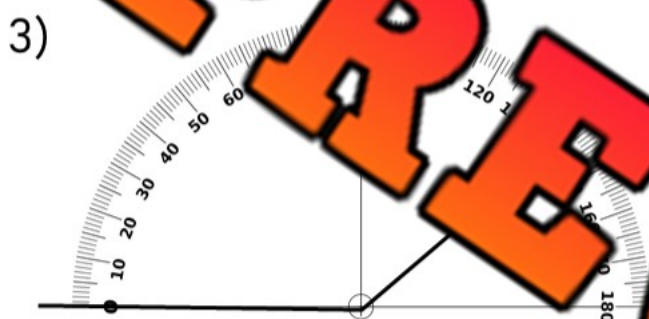
Questions Measure the angles and label them acute, right or obtuse



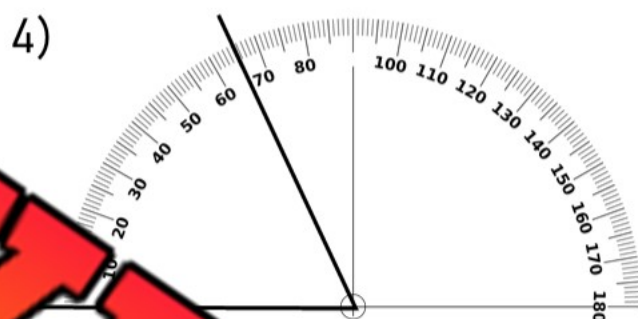
Angle = _____ Type of Angle = _____



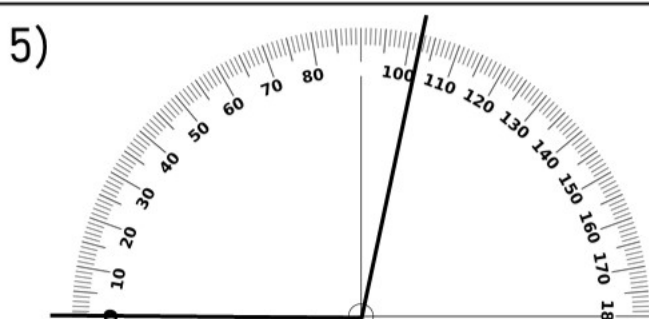
Angle = _____ Type of Angle = _____



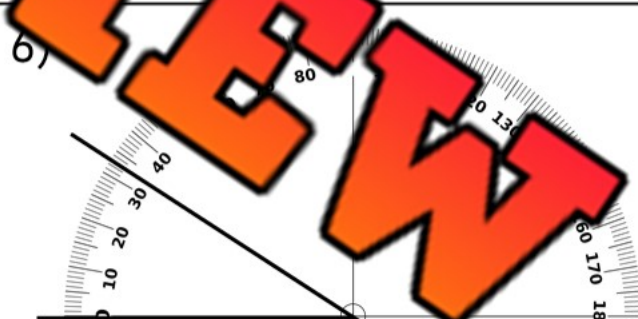
Angle = _____ Type of Angle = _____



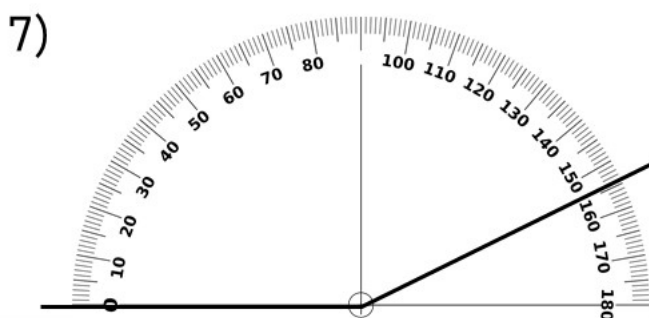
Angle = _____ Type of Angle = _____



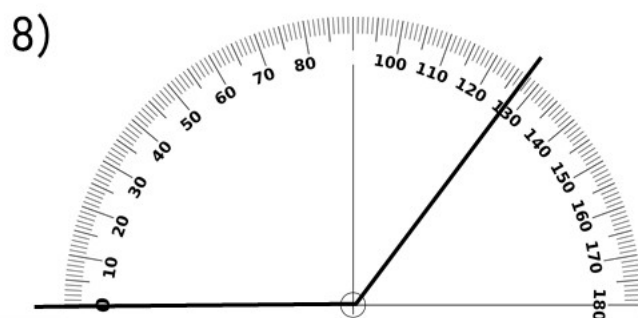
Angle = _____ Type of Angle = _____



Angle = _____ Type of Angle = _____



Angle = _____ Type of Angle = _____



Angle = _____ Type of Angle = _____

Name: _____

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Curriculum Connection
SS.1

Measuring Angles Up To 180°

Questions

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

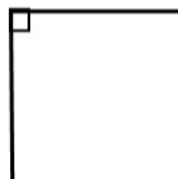
1)



2)



3)



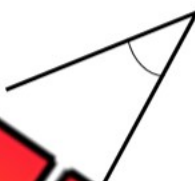
4)



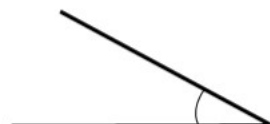
5)



7)



8)



9)



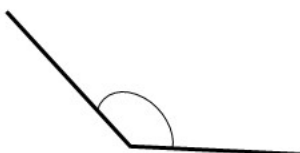
10)



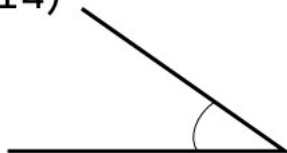
11)



13)



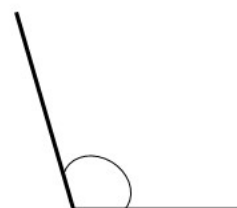
14)



15)



16)

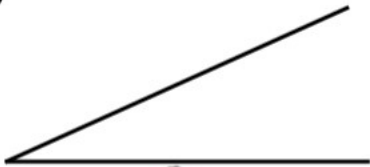


PREVIEW

Constructing Angles - Estimating - Multiple Choice**Questions**

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

1)

a) $\angle = 15^\circ$ c) $\angle = 155^\circ$ d) $\angle =$

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) $\angle = 12^\circ$

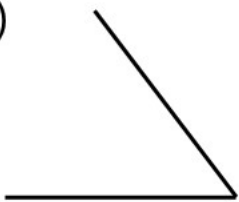
4)

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

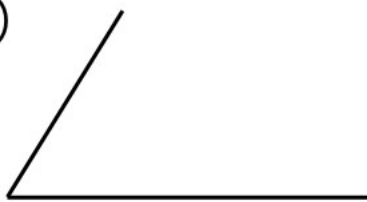
6)

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

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) $\angle = 85^\circ$

Name: _____

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Curriculum Connection
SS.1

Measuring Angles



Acute Triangle – All angles are acute

Obtuse Triangle – One angle is obtuse

Right Triangle – One right angle



Questions

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

1)	2)	3)	4)
$\angle A =$	$\angle A =$	$\angle A =$	$\angle A =$
$\angle B =$	$\angle B =$	$\angle B =$	$\angle B =$
$\angle C =$	$\angle C =$	$\angle C =$	$\angle C =$
Obtuse Triangle			
5)	6)	7)	
$\angle A =$	$\angle A =$	$\angle A =$	$\angle A =$
$\angle B =$	$\angle B =$	$\angle B =$	$\angle B =$
$\angle C =$	$\angle C =$	$\angle C =$	$\angle C =$

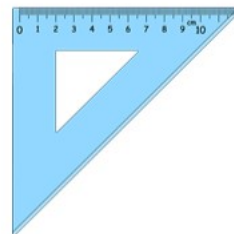
Measuring Angles



Equilateral Triangle – All sides lengths are equal

Isosceles Triangle – Two side lengths are equal

Scalene Triangle – All three side lengths are different



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

1) 	2) 	3) 	4)
$\angle A =$	$\angle A =$	$\angle A =$	$\angle A =$
$\angle B =$	$\angle B =$	$\angle B =$	$\angle B =$
$\angle C =$	$\angle C =$	$\angle C =$	$\angle C =$
Scalene			
5) 	6) 	7) 	8)
$\angle A =$	$\angle A =$	$\angle A =$	$\angle A =$
$\angle B =$	$\angle B =$	$\angle B =$	$\angle B =$
$\angle C =$	$\angle C =$	$\angle C =$	$\angle C =$

Name: _____

14

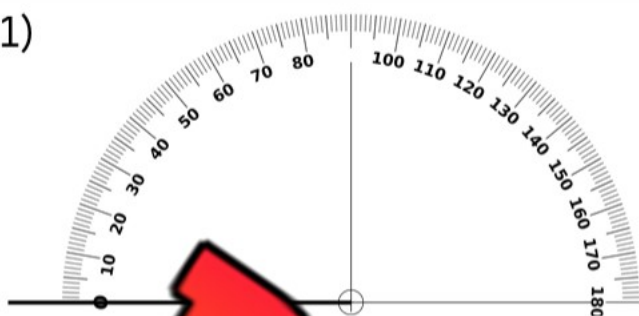
Curriculum Connection
SS.1

Construction Angles Up To 180°

Questions

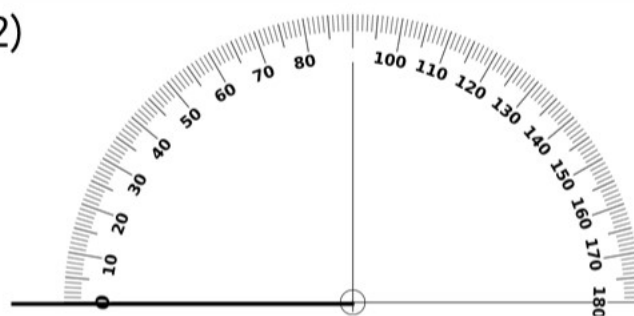
Construct the angles and label them acute, right or obtuse

1)



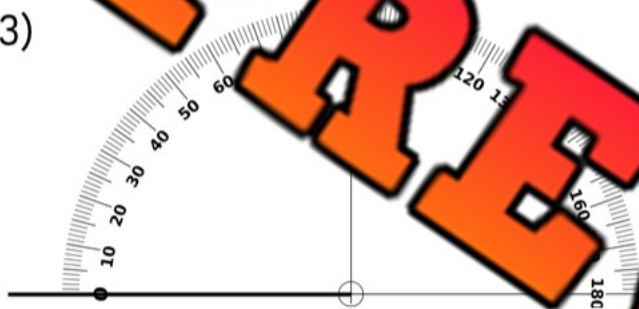
$\angle = 75^\circ$ Type of Angle = _____

2)



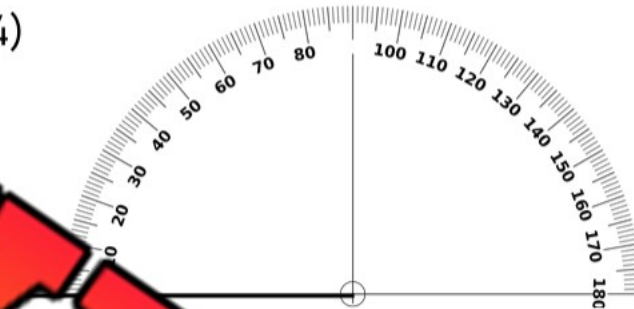
$\angle = 130^\circ$ Type of Angle = _____

3)



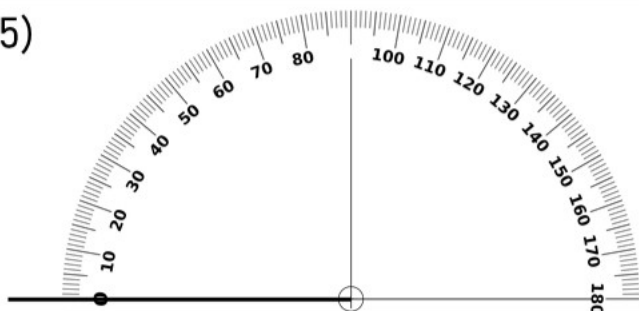
$\angle = 126^\circ$ Type of Angle = _____

4)



$\angle = 178^\circ$ Type of Angle = _____

5)



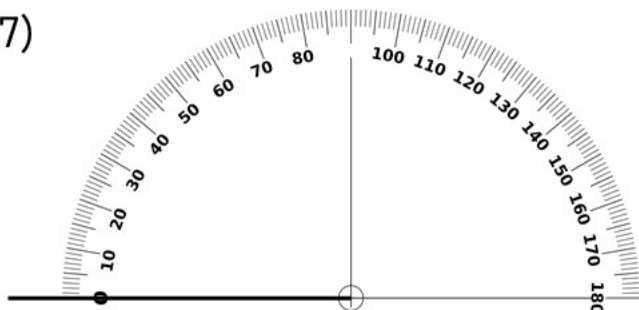
$\angle = 101^\circ$ Type of Angle = _____

6)



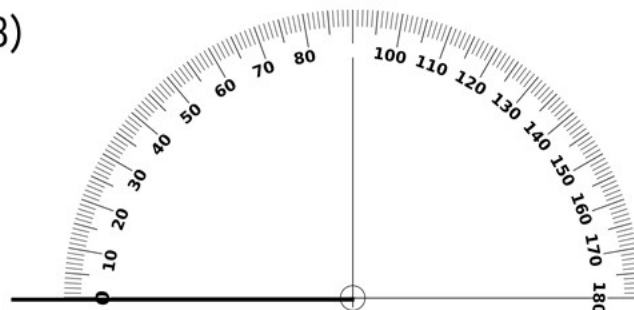
$\angle = 178^\circ$ Type of Angle = _____

7)



$\angle = 156^\circ$ Type of Angle = _____

8)



$\angle = 71^\circ$ Type of Angle = _____

Name: _____

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Curriculum Connection
SS.1

Constructing Angles

Part 1

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

1)

$\angle = 45^\circ$

2)

$\angle = 70^\circ$

3)

$\angle = 120^\circ$

Part 2

Use a protractor to draw the angles below

1)

$\angle = 95^\circ$

2)

$\angle = 115^\circ$

3)

$\angle =$

4)

$\angle = 60^\circ$

5)

$\angle = 25^\circ$

6)

$\angle = 170^\circ$

Name: _____

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Curriculum Connection
SS.1

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 Estimate the angles below using the line provided

1)

 $\angle = 50^\circ$

2)

3)

 $\angle = 130^\circ$

Part 2

Draw the angles below

1)

2)

 $\angle = 80^\circ$ $\angle = 70^\circ$ $\angle = 165^\circ$

4)

5)

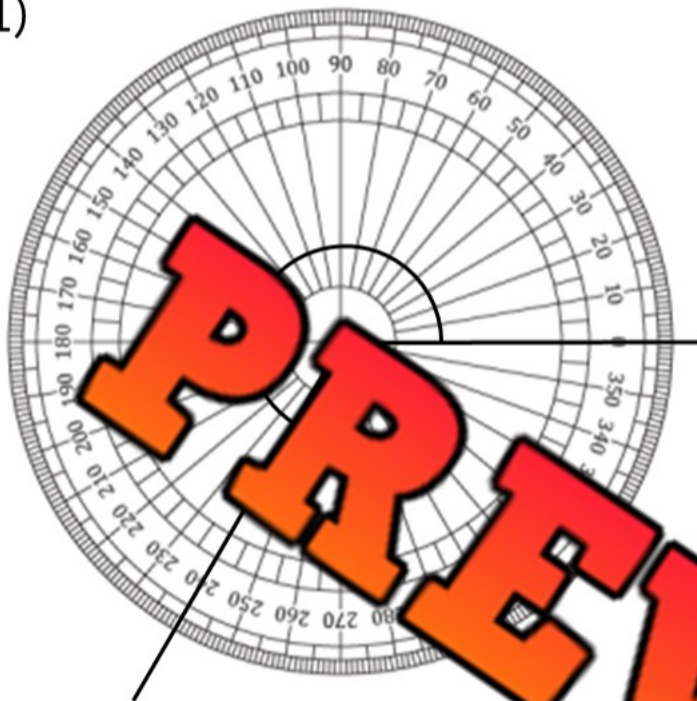
6)

 $\angle = 120^\circ$ $\angle = 30^\circ$ $\angle = 140^\circ$

Using Printed Protractor - Angles Up To 360°**Questions**

Measure the angles below using the circular protractor

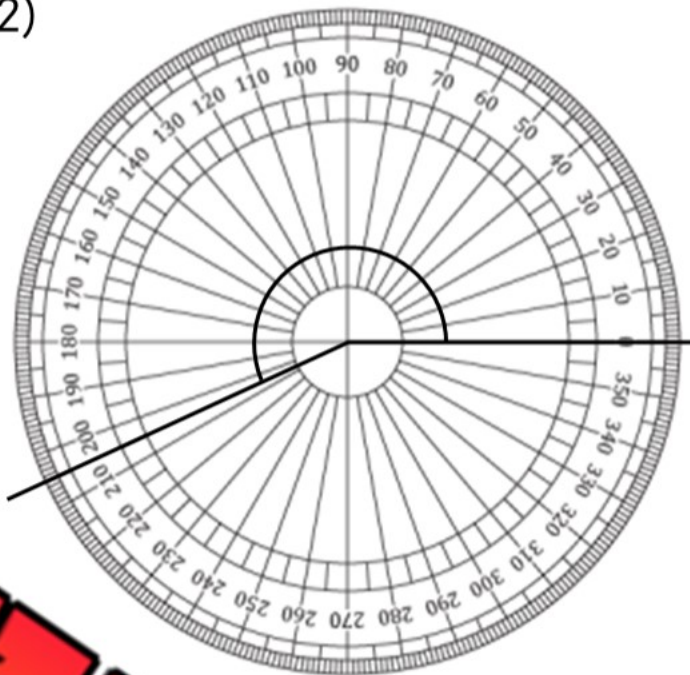
1)



Angle =

Type of Angle =

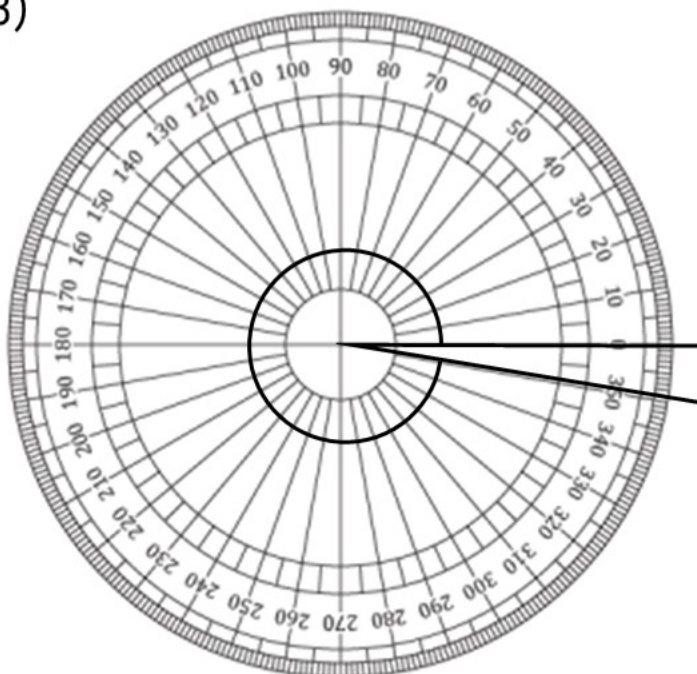
2)



Angle =

Type of Angle =

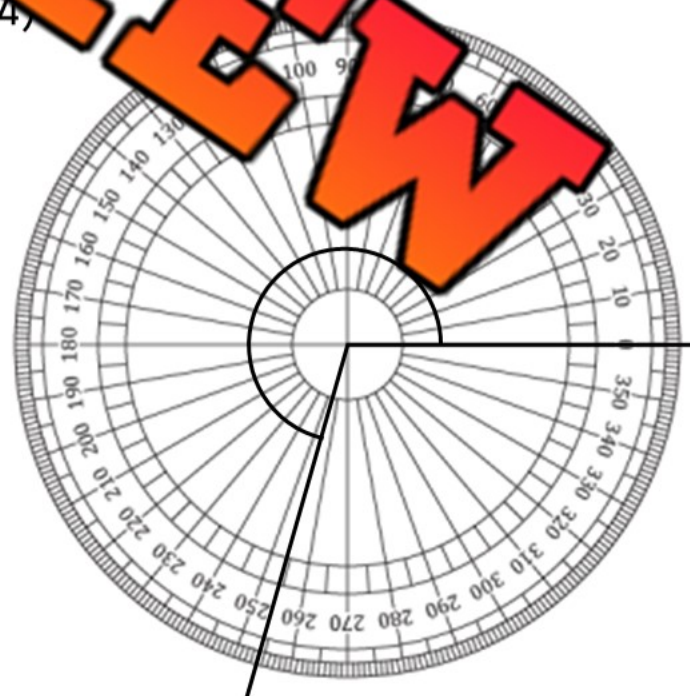
3)



Angle =

Type of Angle =

4)



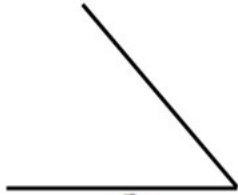
Angle =

Type of Angle =

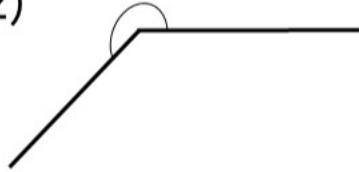
Constructing Angles - Estimating - Multiple Choice**Questions**

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

1)

a) $\angle = 45^\circ$ b) $\angle = 110^\circ$ c) $\angle = 90^\circ$ d) $\angle = 180^\circ$

2)

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

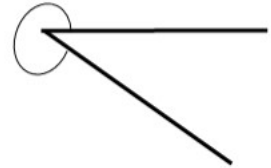
3)

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) $\angle = 10^\circ$

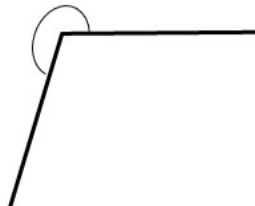
6)

a) $\angle = 90^\circ$ b) $\angle = 120^\circ$ c) $\angle = 10^\circ$ d) $\angle = 160^\circ$ a) $\angle = 90^\circ$ b) $\angle = 180^\circ$ c) $\angle = 10^\circ$ d) $\angle = 160^\circ$

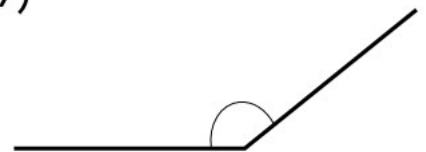
7)

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) $\angle = 355^\circ$

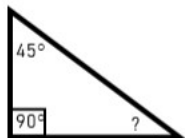
9)

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

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.

Example:



Solution: $90 + 45 + ? = 180$

$$135 + ? = 180$$

$$135 + \boxed{45} = 180$$

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

therefore, the missing angle is 45°

Part 1

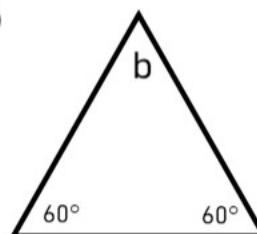
Find the missing angle in the triangles below

1)



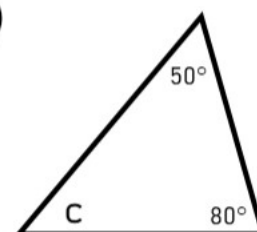
c =

3)



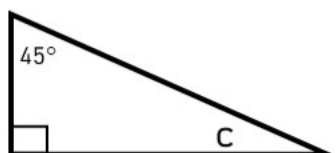
a =

4)



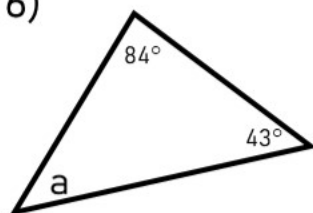
c =

5)



c =

6)



a =

7)



b =

c =

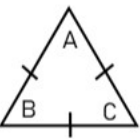
Part 2

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

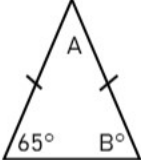
Interior angles are the angles inside a shape. The interior angles of a triangle will always equal 180° . We can use this information to solve for unknown angle measurements.



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

$$60 + 60 + 60 = 180$$

Equilateral Triangle

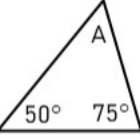


Two angles are the same. Therefore, angle A = 50°

$$65 + 65 + A = 180$$

$$A = 50^\circ$$

Isosceles Triangle



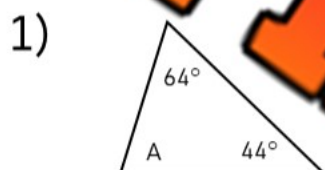
All angles are different. Therefore, angle A = 55°

$$50 + 75 + A = 180$$

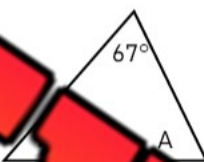
$$A = 55^\circ$$

Scalene Triangle

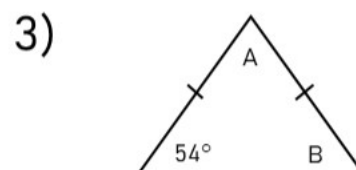
Questions: Find the values of the unknown angle measurements



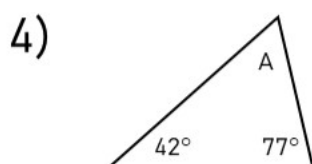
A =



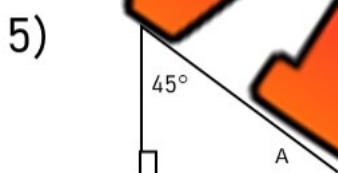
A =



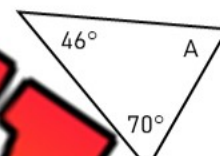
A =



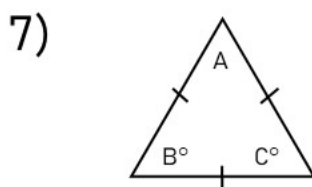
A =



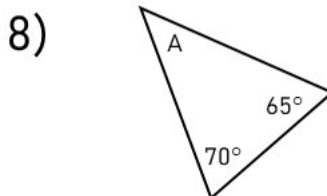
A =



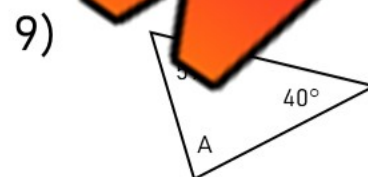
A =



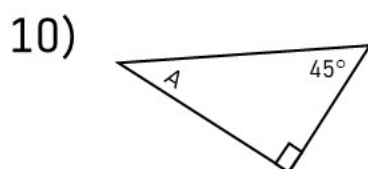
A =



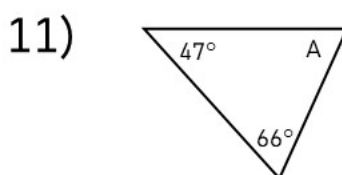
A =



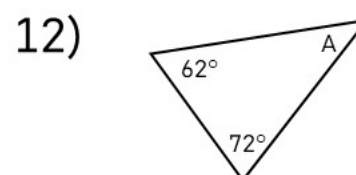
A =



A =



A =



A =

Interior Angles - Quadrilaterals

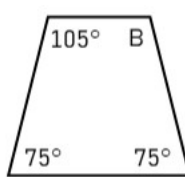
Interior angles are the angles inside a shape. The interior angles of a quadrilateral will always equal 360° . We can use this information to solve for unknown angle measurements.



A rectangle has 4 equal angles that are 90° .

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

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



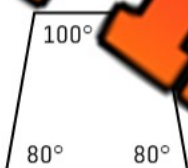
The trapezoid has 2 pairs of equal angles.

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

$$B = \underline{105}$$

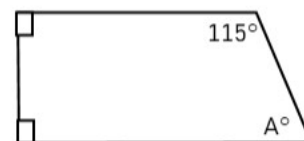
Questions: Find the values of the unknown angle measurements

1)



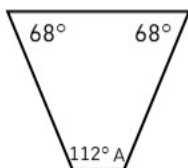
A =

3)



A =

4)



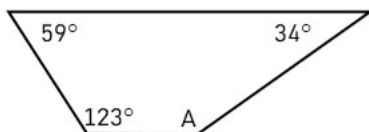
A =

5)



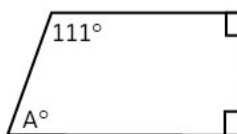
A =

7)



A =

8)



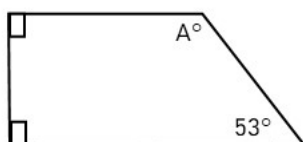
A =

9)



A =

10)



A =

11)



A =

12)

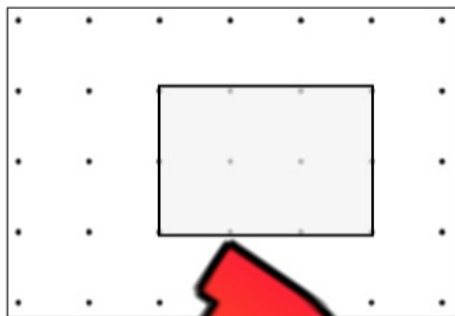


A =

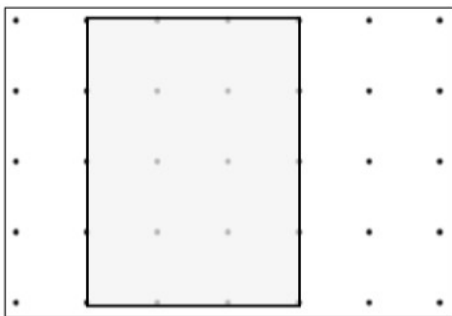
Perimeter of Regular and Irregular Polygons

Part 1

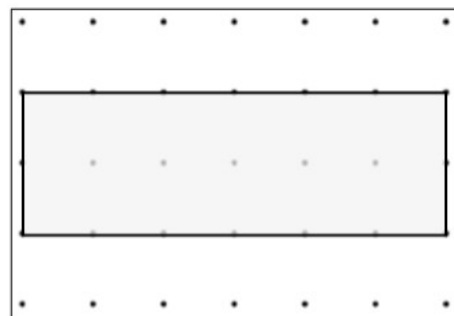
Find the perimeter of the rectangles below



1) Perimeter= _____



2) Perimeter= _____



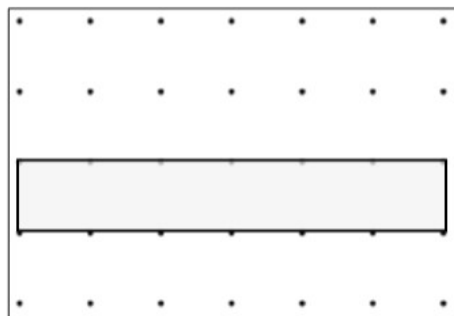
3) Perimeter= _____



4) Perimeter= _____



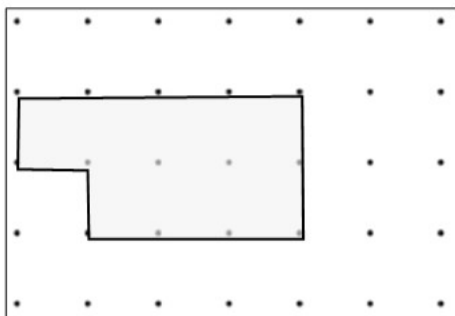
5) Perimeter= _____



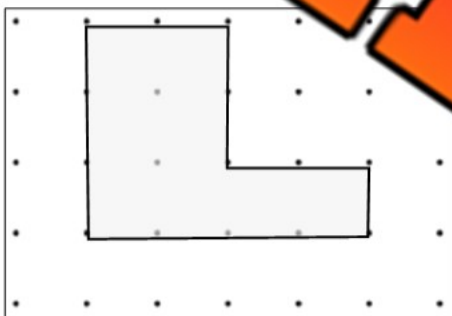
6) Perimeter= _____

Part 2

Find the perimeter of the polygons below



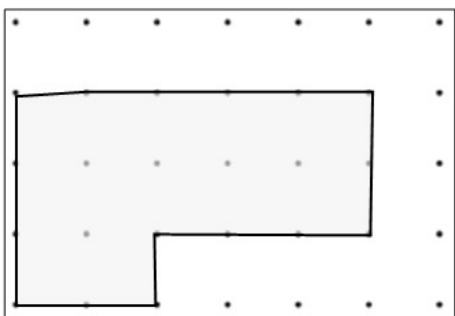
1) Perimeter= _____



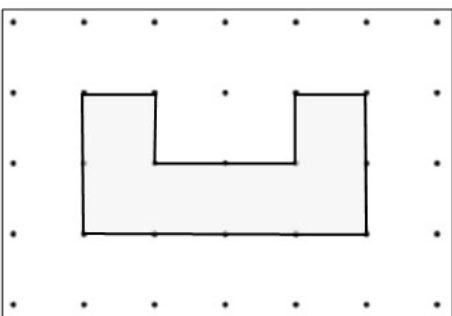
2) Perimeter= _____



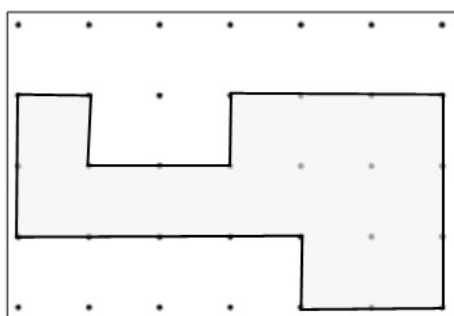
3) Perimeter= _____



4) Perimeter= _____



5) Perimeter= _____



6) Perimeter= _____

Name: _____

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Curriculum Connection
SS.3

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

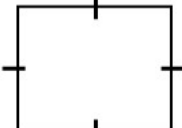
3cm

Formula 2

$$a + b \times 2$$

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

Question Use both formulas to calculate the perimeter of the quadrilaterals

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

Name: _____

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Regular and Irregular Polygons - Word Problems**Questions**

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 found 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 total length 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?

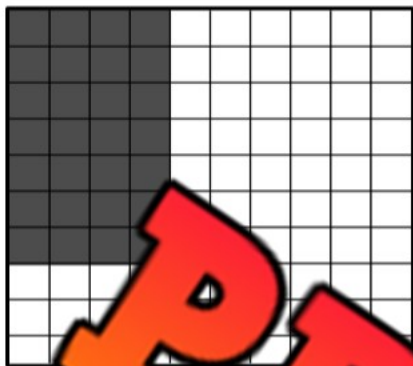


Area - CM Squared

Questions

Calculate the area using cm as your units

1)

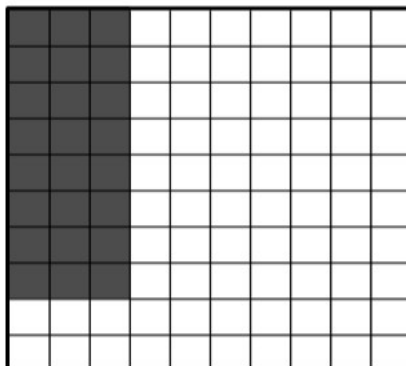


$$A = b \times h$$

$$A = ___ \times ___$$

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

2)

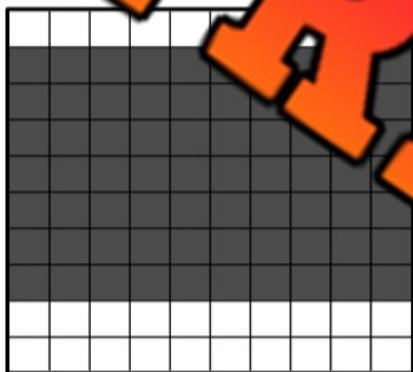


$$A = b \times h$$

$$A = ___ \times ___$$

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

3)

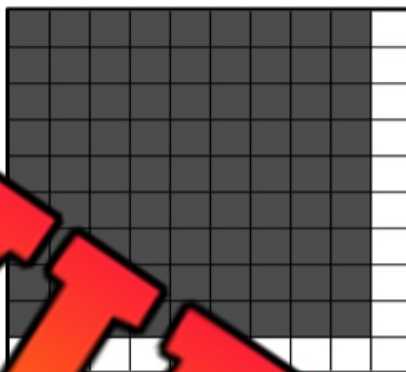


$$A = b \times h$$

$$A = ___ \times ___$$

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

4)

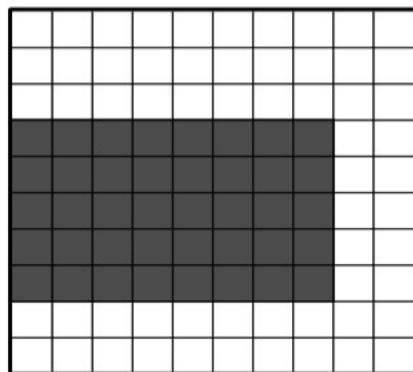


$$A = b \times h$$

$$A = ___ \times ___$$

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

5)



$$A = b \times h$$

$$A = ___ \times ___$$

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

6)

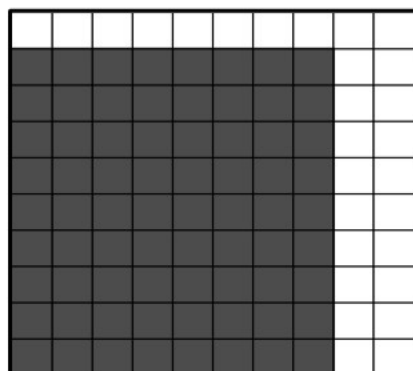


$$A = b \times h$$

$$A = ___ \times ___$$

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

7)

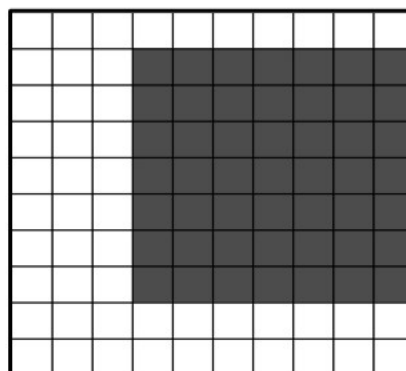


$$A = b \times h$$

$$A = ___ \times ___$$

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

8)



$$A = b \times h$$

$$A = ___ \times ___$$

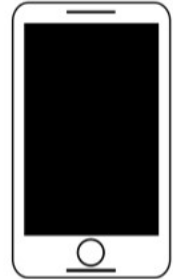
$$A = ___ \text{ cm}^2$$

Area Word Problems

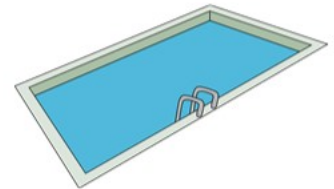
Questions

Draw a picture of the problem and then find the area

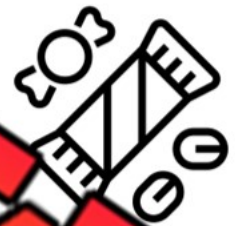
1) A phone is 11cm by 60mm. What is the area of the phone?



2) A pool is 10m by 9cm. What is the area of the pool?



4) A candy wrapper is 40mm wide and 10cm 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 box?



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



Name: _____

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Finding the Missing Information

Questions

Find 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)

$A = 36\text{m}^2$

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**Questions** 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) Hudson is mowing a rectangular quadrilateral. It has an area of 81m^2 . What are the side lengths?



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



4) A poster shaped like an irregular quadrilateral has a base of 9cm and an area of 126cm^2 . What is the height of the poster?



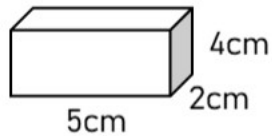
5) A cookie sheet has an area of 104cm^2 . The base of the sheet is 8cm . What is the height of the cookie sheet?



Calculating Volume - Blocks

Rectangular Prism - Calculating Volume

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



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

Questions

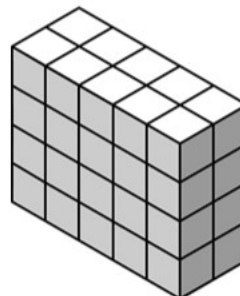
Label the rectangular prisms and then calculate the volume

1)



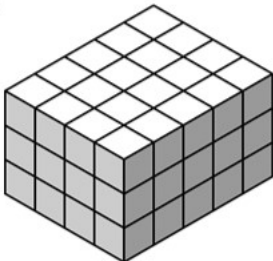
$l =$ _____
 $w =$ _____
 $h =$ _____
 $v =$ _____

2)



$l =$ _____
 $w =$ _____
 $h =$ _____
 $v =$ _____

3)



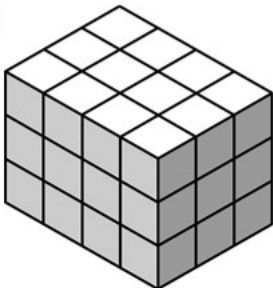
$l =$ _____
 $w =$ _____
 $h =$ _____
 $v =$ _____

6)



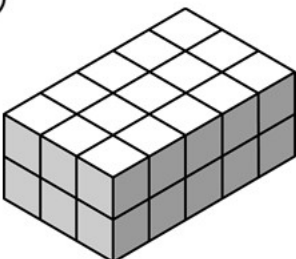
$l =$ _____
 $w =$ _____
 $h =$ _____
 $v =$ _____

5)



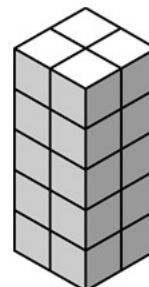
$l =$ _____
 $w =$ _____
 $h =$ _____
 $v =$ _____

7)



$l =$ _____
 $w =$ _____
 $h =$ _____
 $v =$ _____

8)



$l =$ _____
 $w =$ _____
 $h =$ _____
 $v =$ _____

Calculating Volume of Rectangular Prisms

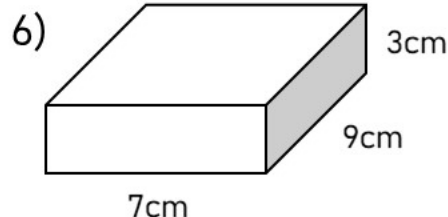
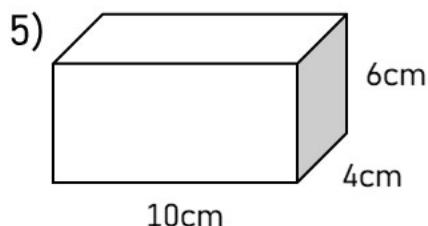
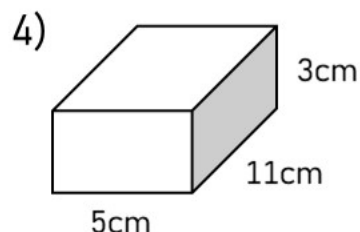
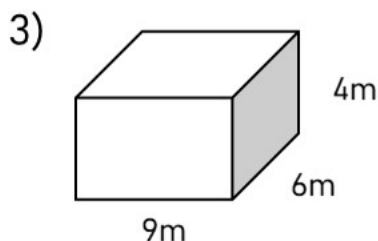
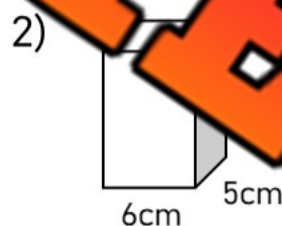
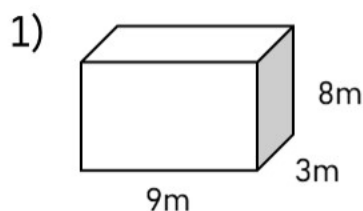
Part 1

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	9cm	3cm		
Box 5	8cm	6cm		
Box 6	8cm			
Box 7	7cm	4cm		

Part 2

Calculate the volume of the rectangular prisms

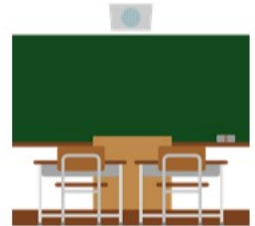


Calculating Volume of Rectangular Prisms

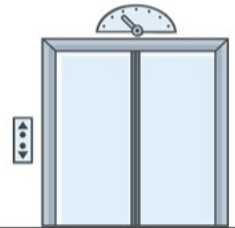
Questions

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?



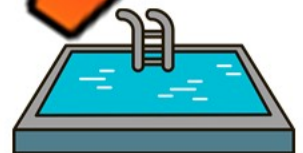
2) An elevator is 2m tall, 2m deep, and 4m long. What is the volume of the elevator?



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?



Regular vs Irregular Polygons

Regular

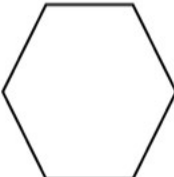
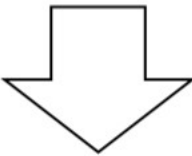
Regular Polygons

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

Irregular

Part 1

Label the polygons regular or irregular

1. 	3. 	4. 	5. 
_____	_____	_____	_____
6. 	7. 	8. 	9. 
_____	_____	_____	_____

Part 2

Draw regular and irregular polygons

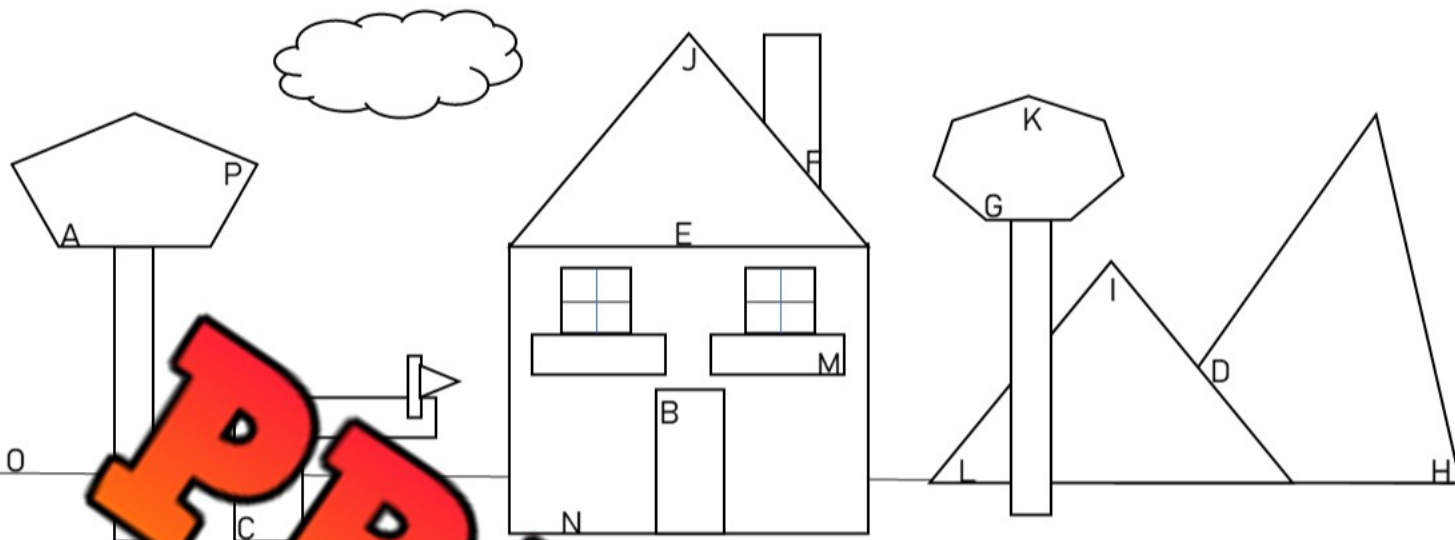
1)	2)	3)	4)	
Regular	Regular	Regular	Regular	Regular
6)	7)	8)	9)	10)
Irregular	Irregular	Irregular	Irregular	Irregular

Name: _____

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Curriculum Connection
SS.4

Finding Obtuse, Acute, Straight, and Right Angles



Questions What are the angles called with a letter – Straight, Acute, Obtuse, or Right

Letters	Name of Angle	Letters	Name of Angle
A			
B			
C		K	
D		L	
E		M	
F		N	
G		O	
H		P	

Name: _____

63

Curriculum Connection
SS.4

Angles in Triangles and Rectangles

Part 1

How many right angles are there? Use a square to label them

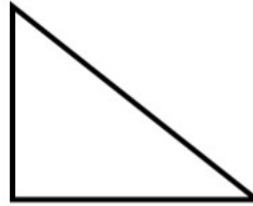
1)



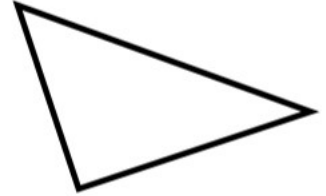
2)



3)



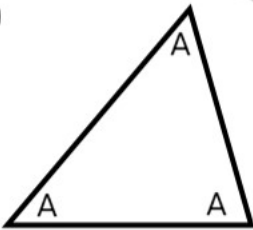
4)



Part 2

Label each angle (A) or obtuse (O) or right (R) inside the shapes below

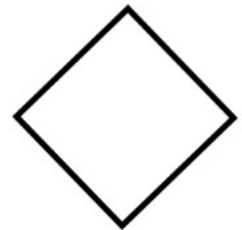
5)



7)



8)



Acute = 3

Acute =

Acute =

Acute =

Obtuse = 0

Obtuse =

Obtuse =

Obtuse =

Right = 0

Right =

Right =

Part 3

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

9)

Triangle

Acute = 2

Obtuse = 1

Right = 0

10)

Triangle

Acute = 3

Obtuse = 0

Right = 0

11)

Rectangle

Acute = 0

Obtuse = 0

Right = 4

12)

Triangle

Acute = 2

Obtuse = 0

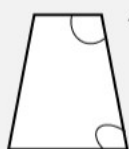
Right = 1

Name: _____

64

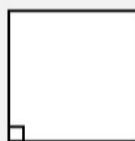
Curriculum Connection
SS.4

Naming Angles in Quadrilaterals



Obtuse
Larger than right angle

Acute
Smaller than right angle



right angle
90°



Reflex
Larger than 180°

Part 1 Draw the inside angle that is circled. Then label it an acute, obtuse, right, or reflex angle

1)

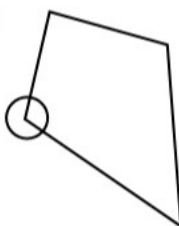


Right Angle

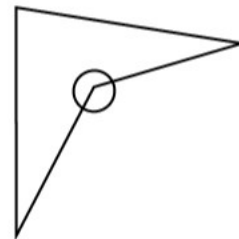
2)



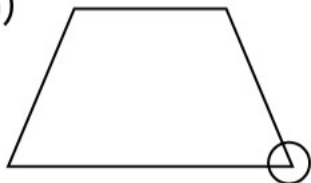
3)



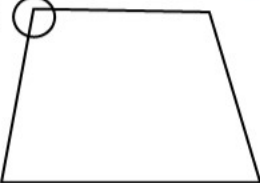
4)



5)



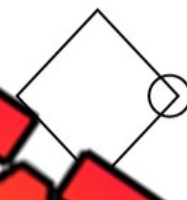
6)



7)

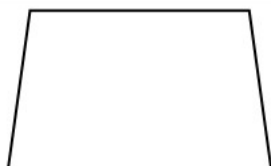


8)



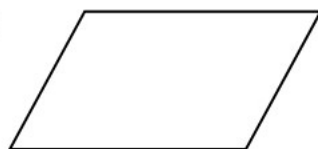
Part 2 Circle the angles below on the shapes

9)



2 Acute Angles

10)



2 Obtuse Angles

11)



1 Reflex Angle

Name: _____

67

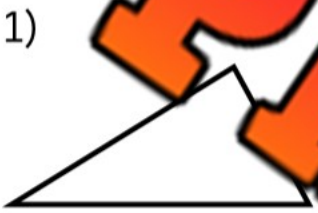
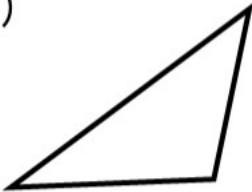
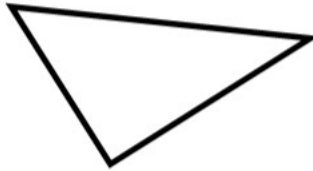
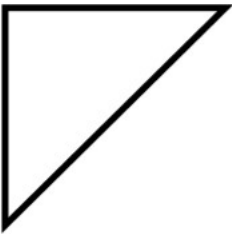
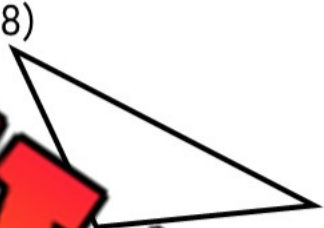
Curriculum Connection
SS.4

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

Label the triangles acute, obtuse or right

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

Part 2

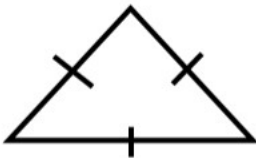
Draw a picture of the three different types of triangles

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

Name: _____

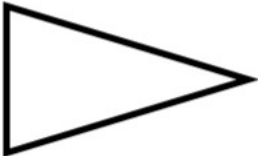
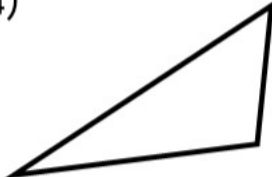
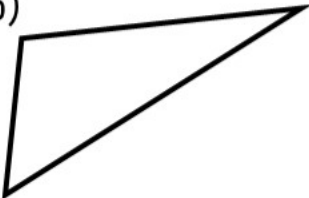
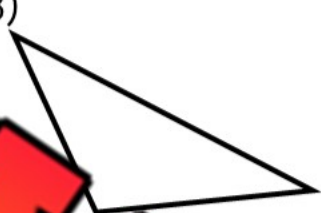
69

Curriculum Connection
SS.4**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

Label the triangles equilateral, isosceles, or scalene

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

Part 2

Draw a picture of the three different types of triangle

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

Constructing Triangles

Questions

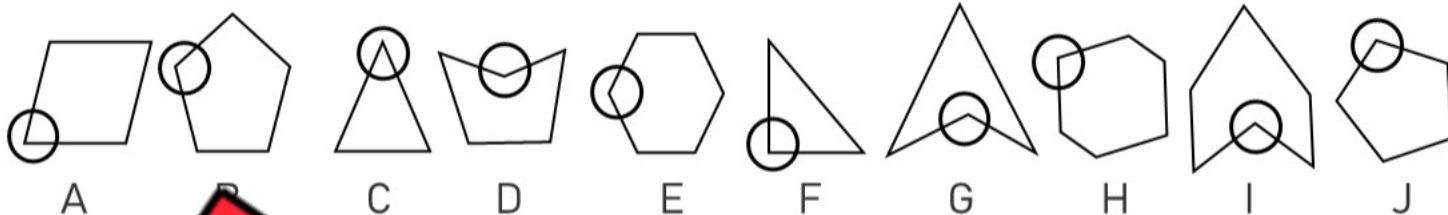
Draw triangles below that fit the description

1)	2)	3)
		
1 angle at 60°	1 angle at 90°	1 angle at 100°
1 angle at 60°	1 angle at 90°	1 angle at 35°
1 angle at 60°	1 angle at 45°	1 angle at 45°
4)	5)	
		
1 angle at 80°	1 angle at 40°	1 angle at 55°
1 angle at 80°	1 angle at 30°	1 angle at 75°
1 angle at 20°	1 angle at 110°	1 angle at 50°

Sorting Angles in Polygons

Part 1

Sort the inside angles into the categories below



Angles	Angle	Obtuse	Acute	Reflex
Letters				

Part 2

Sort the angles into the categories below



Angles	Right Angle	Obtuse	Acute	Reflex
Letters				

Part 3

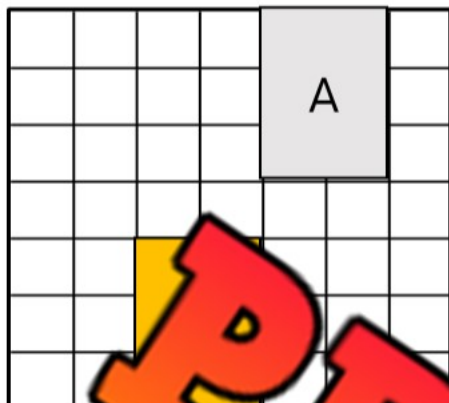
Circle the angles below

Drawings				
Angles	Right Angle	Obtuse	Acute	Reflex

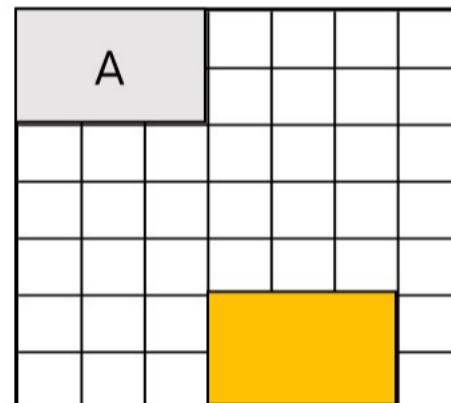
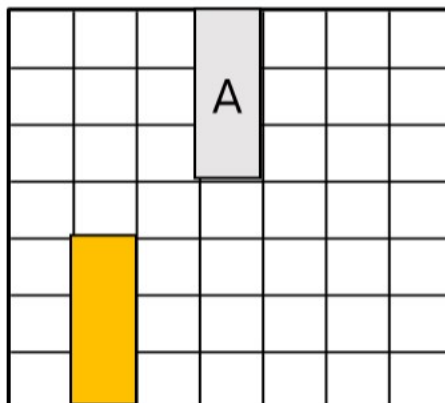
Describing Translations

Questions

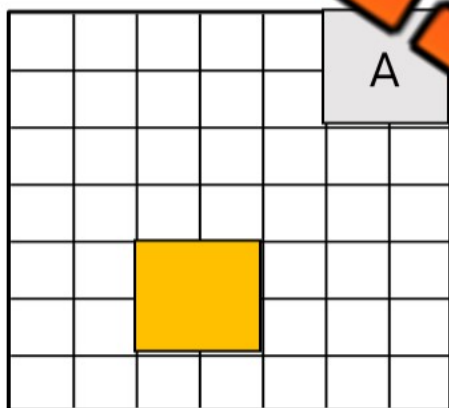
Describe the translations below using arrows. Shape A is the original object



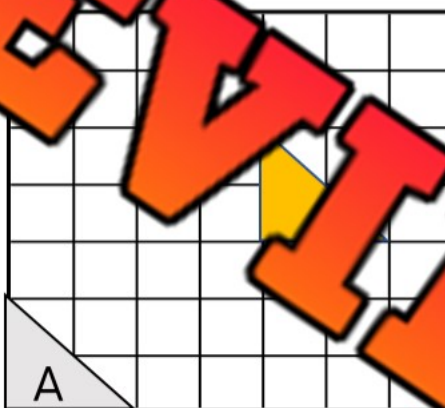
1) 4 ↓



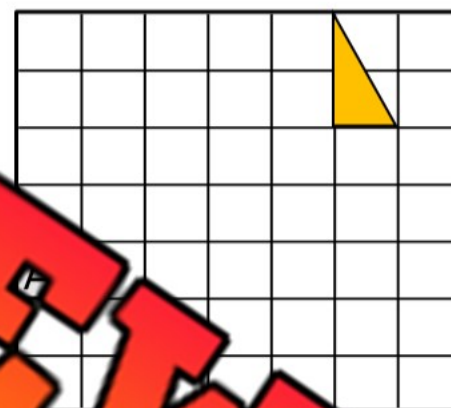
3) _____



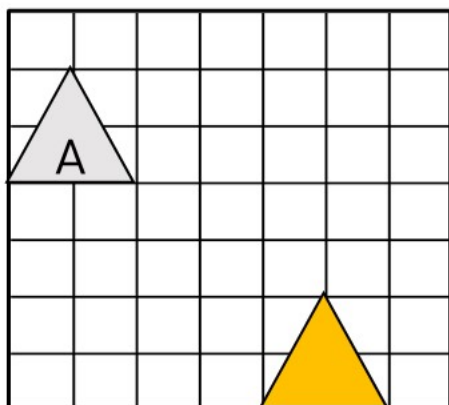
4) _____



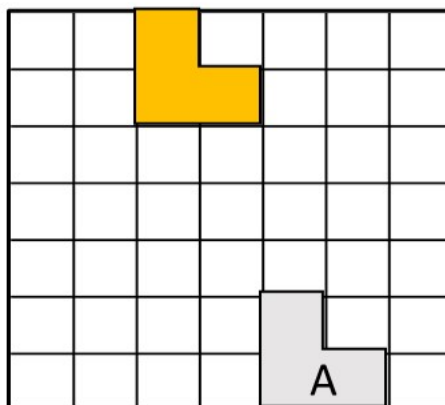
5) _____



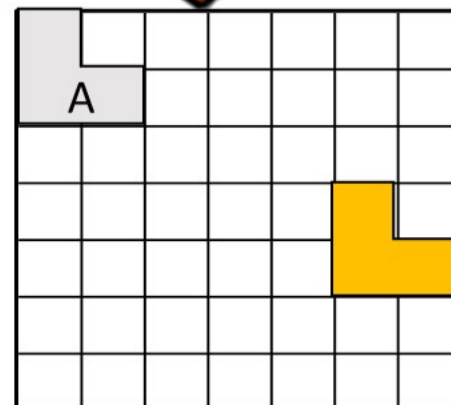
6) _____



7) _____



8) _____

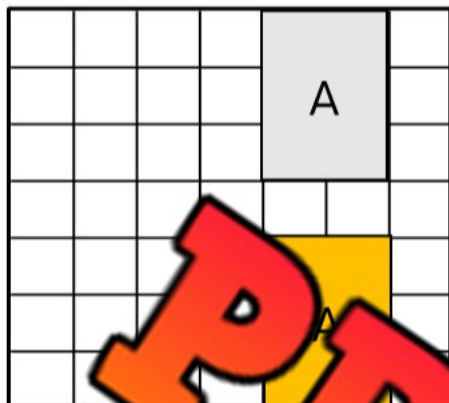
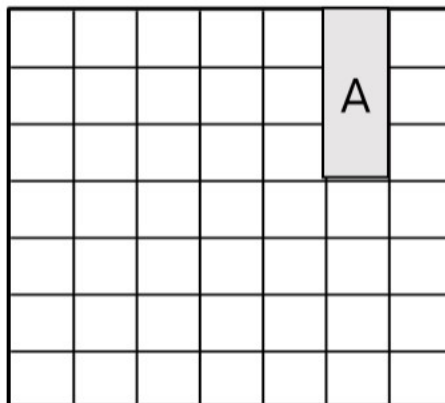
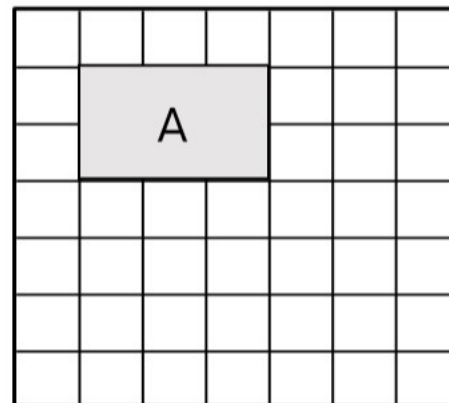
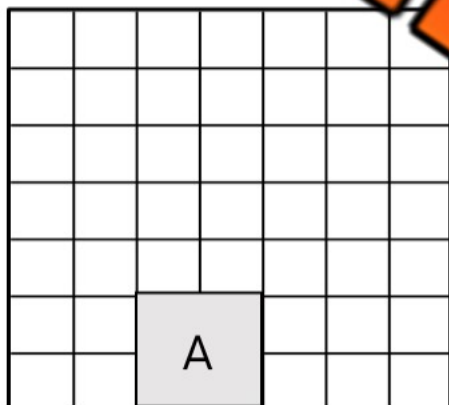
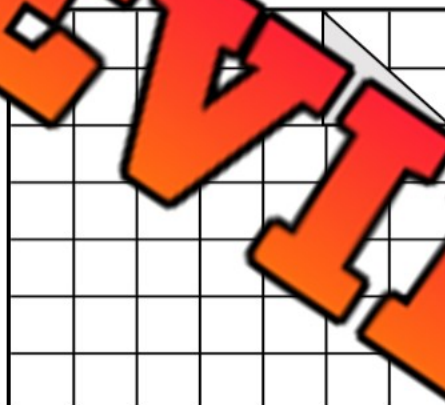
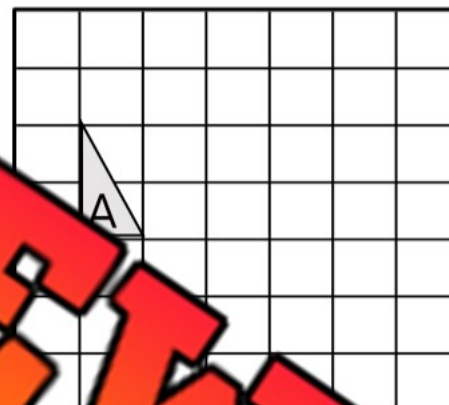
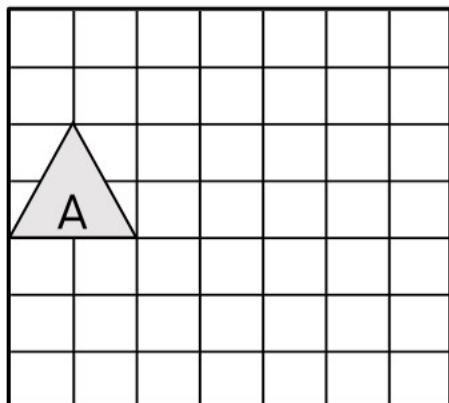
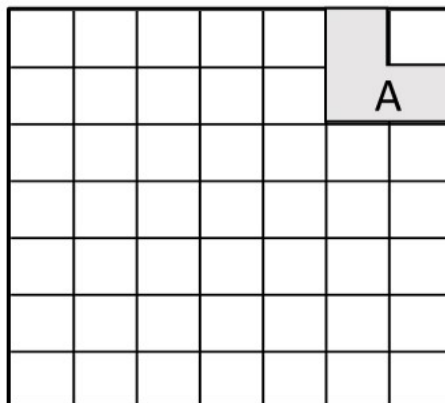
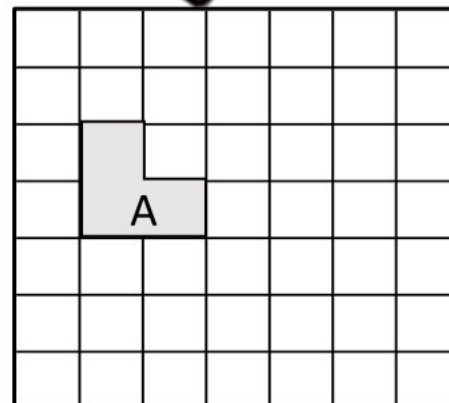


9) _____

Performing Translations

Questions

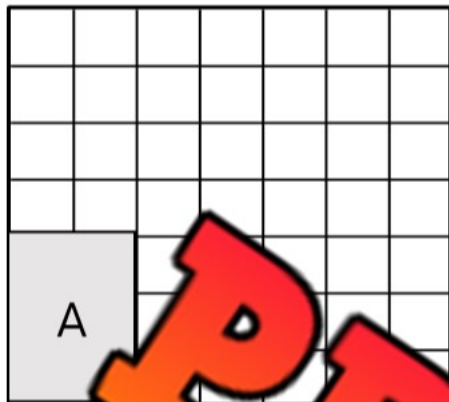
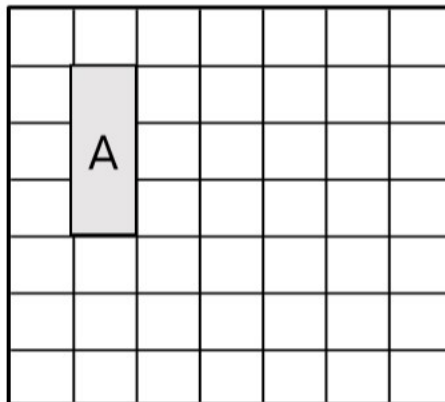
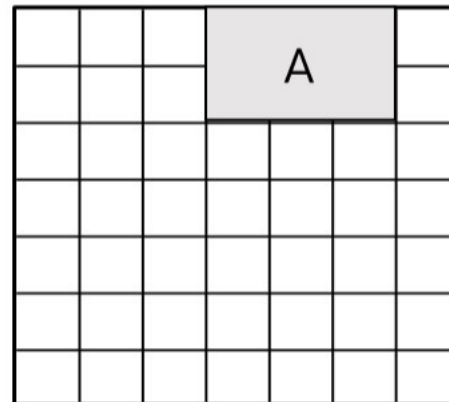
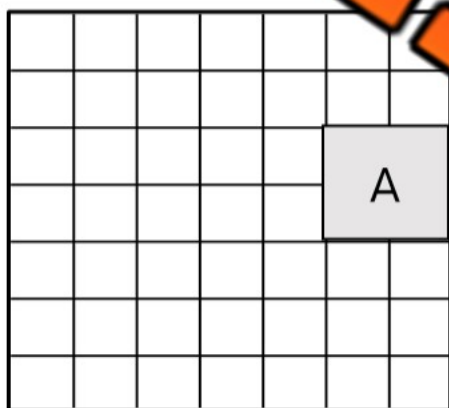
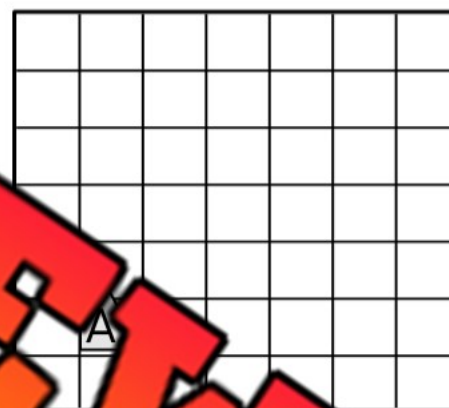
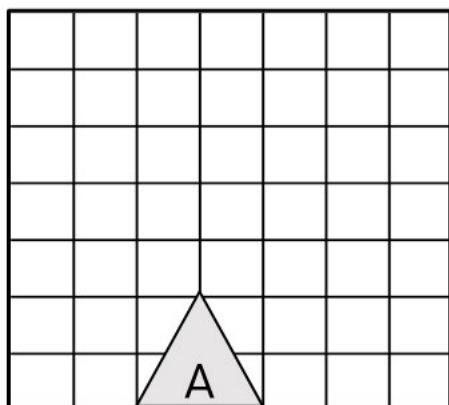
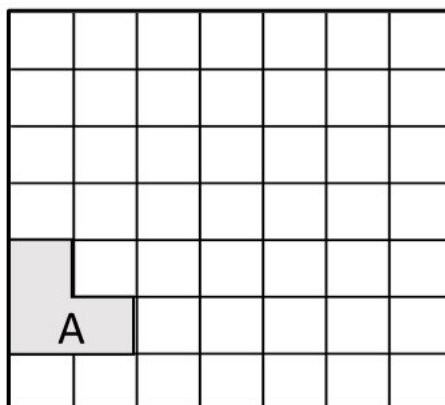
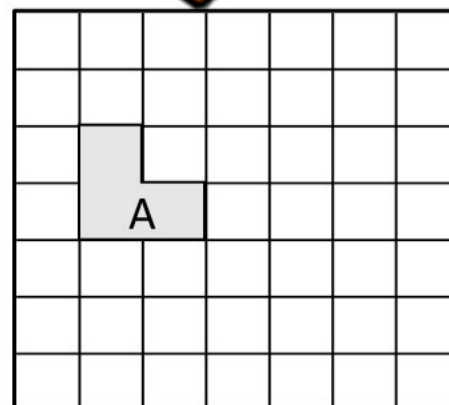
Draw the translations below. Shape A is the original object

1) 4 ↓2) 2 ↓, 4 ←3) 4 ↓, 3 →4) 4 ↑, 2 →5) 5 ↓, 4 ←6) 1 ↓, 1 →7) 3 ↓, 5 →8) 5 ↓, 4 ←9) 1 ↑, 4 →

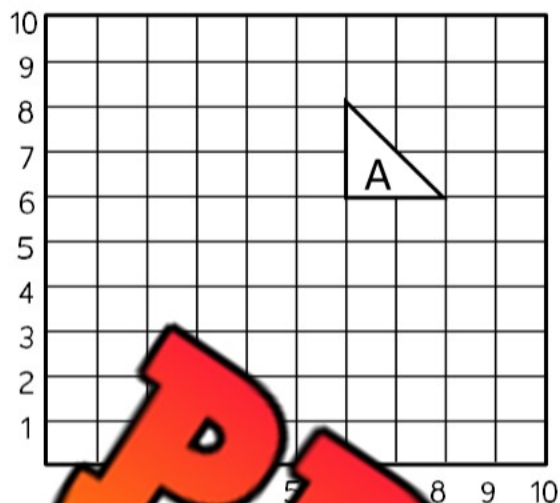
Performing Translations

Questions

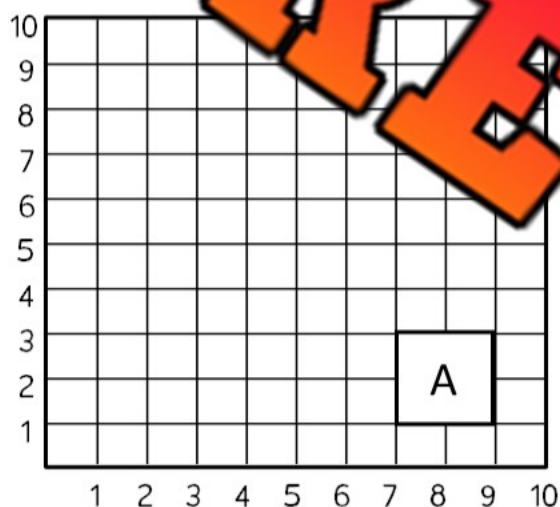
Draw the new shape after reading the 3 steps

1) 3 ↑, 4 →2) 2 ↓, 4 →, 1 ↓3) 3 ↓, 2 ←, 2 ↓4) 3 ↓, 4 ←, 1 ↑5) 2 ↓, 4 →, 3 ↑6) 3 ↓, 4 ←, 2 ↓7) 4 ↑, 2 →, 3 ←8) 4 ↑, 4 →, 5 ↓9) 3 ↓, 3 →, 2 ↑

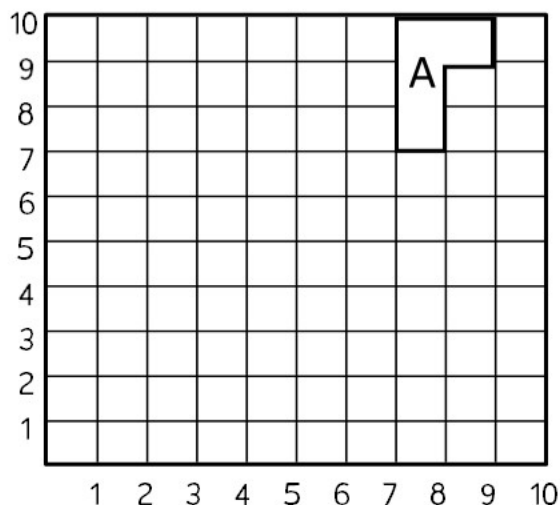
Translating Shapes - Cartesian Plane



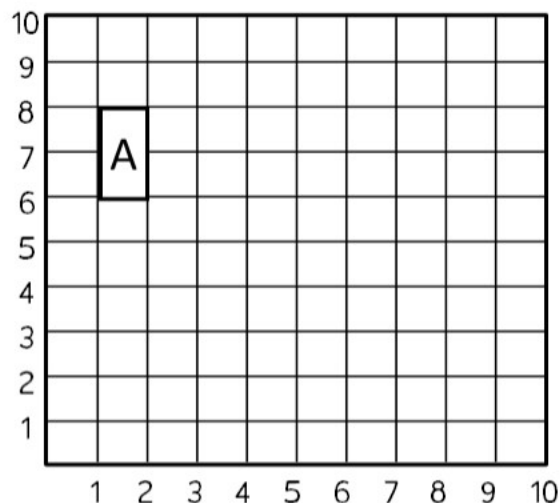
1) Left



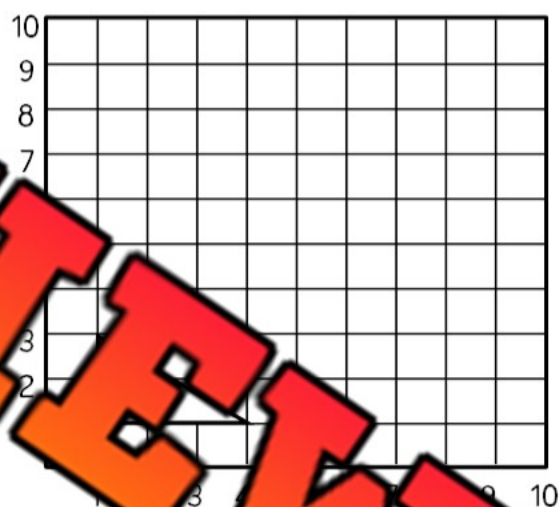
3) Left 6, up 2



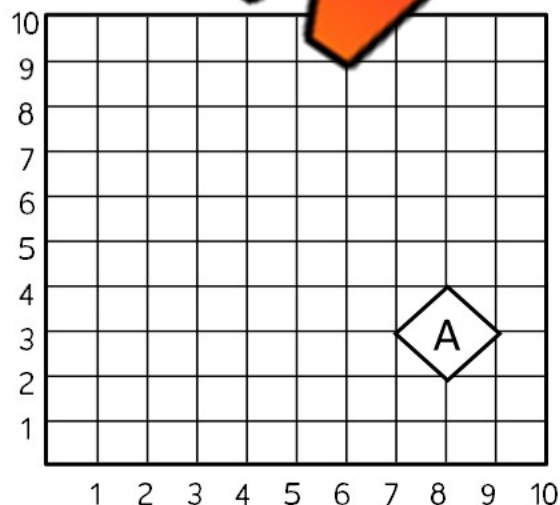
5) Left 3, down 6



2) Right 5, down 4



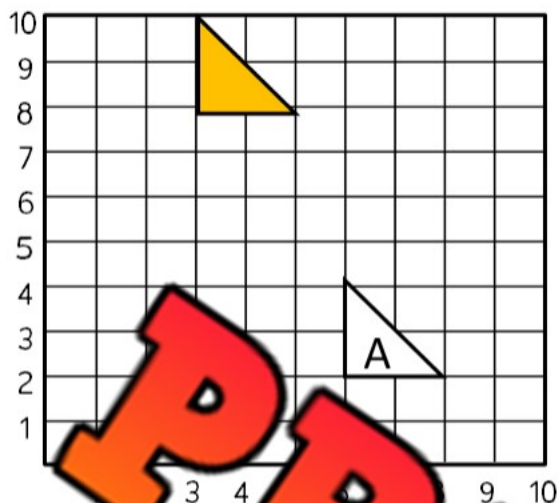
4) Right



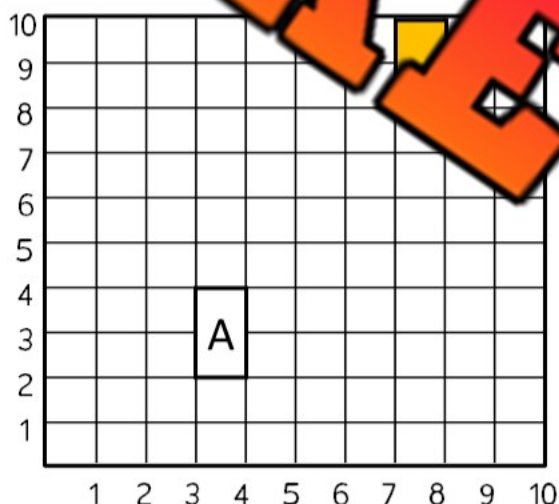
6) Left 2, up 4

Describing Translations - Cartesian Plane

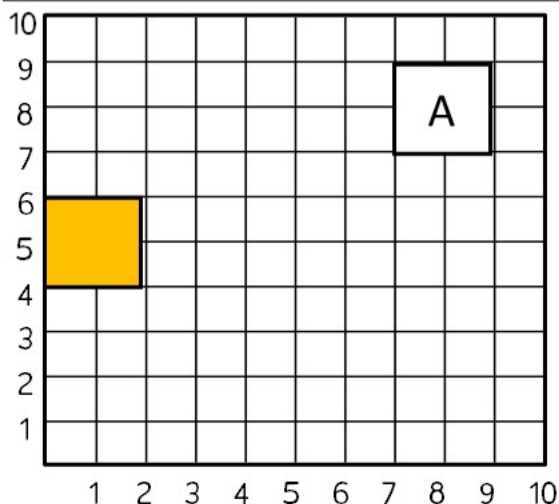
Instructions: Describe the translations below. Shape A is the original shape.



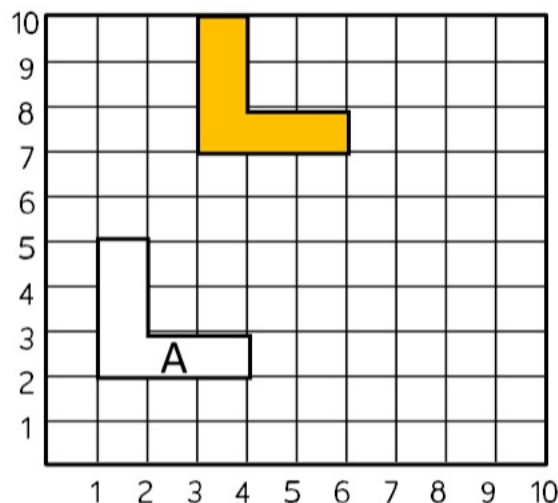
1) _____



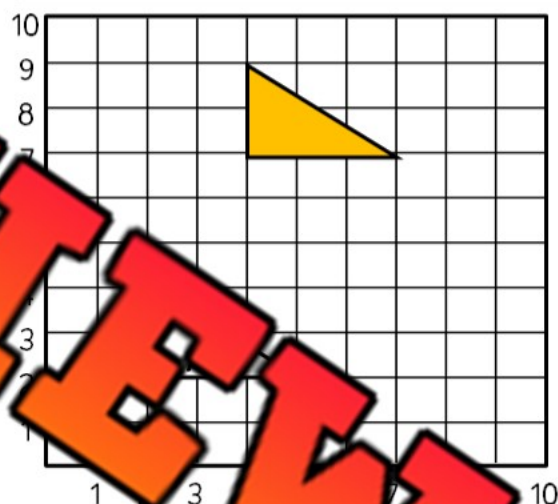
3) _____



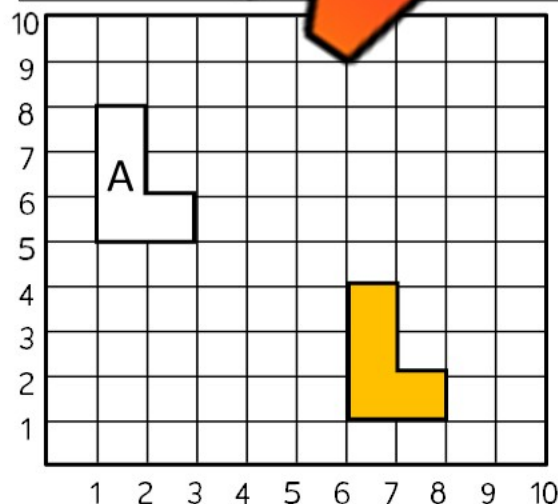
5) _____



2) _____



4) _____



6) _____

Name: _____

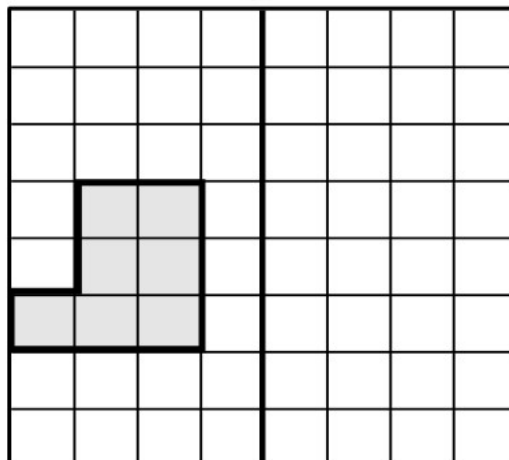
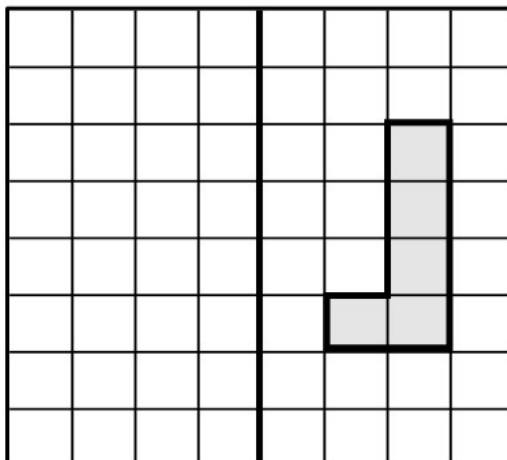
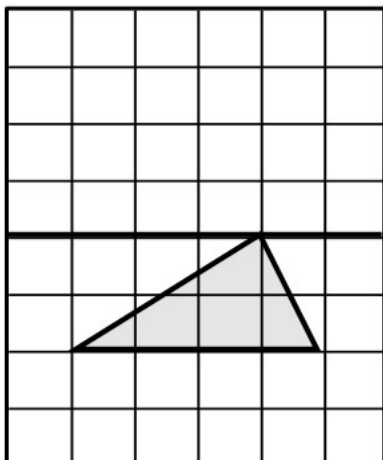
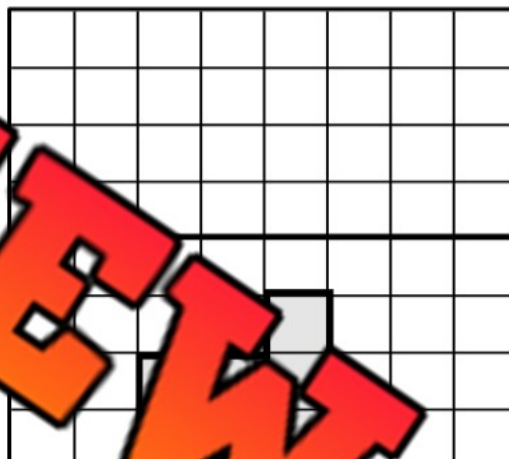
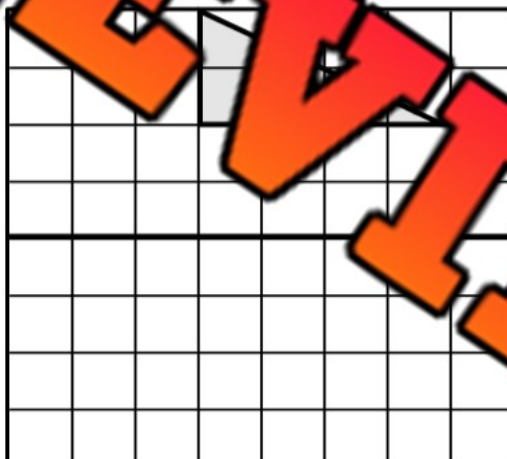
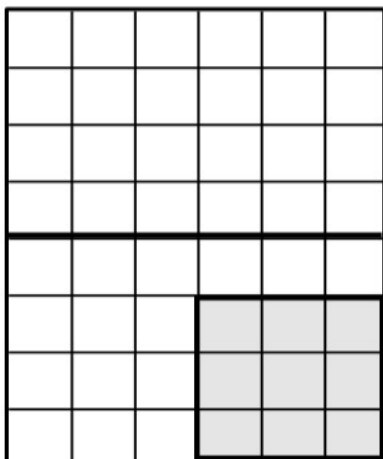
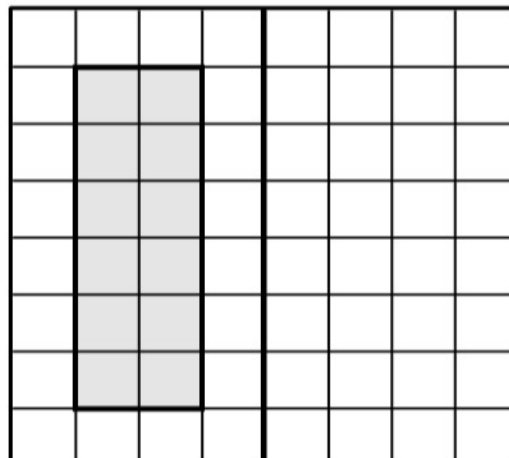
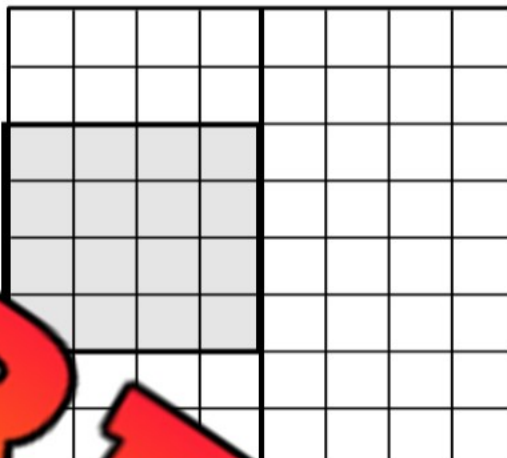
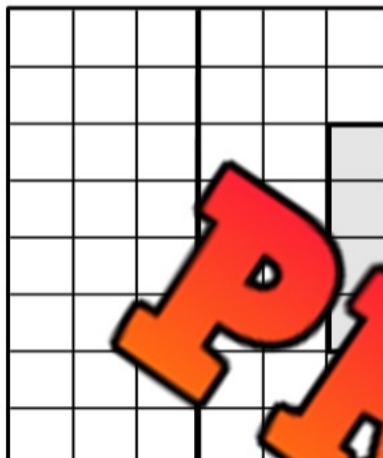
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Curriculum Connection
SS.6

Drawing Reflections

Questions

Reflect the shapes across the mirror line

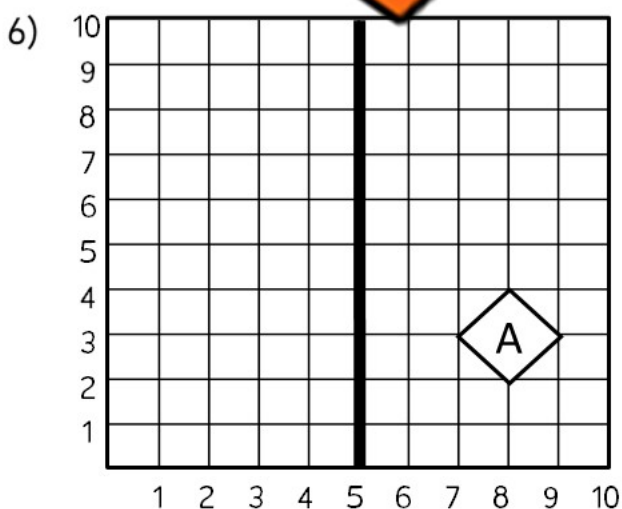
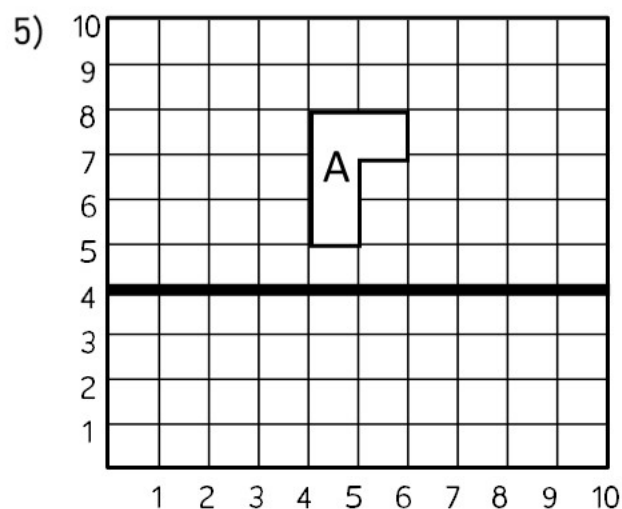
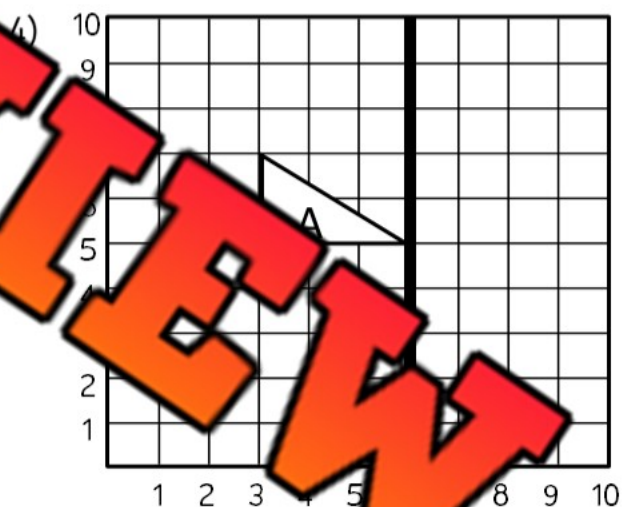
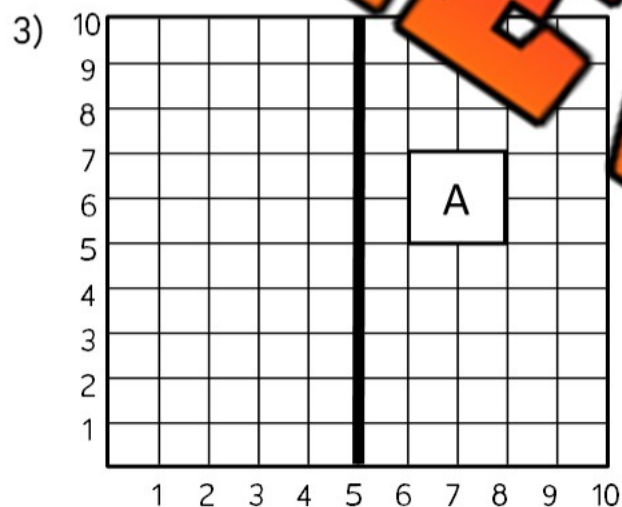
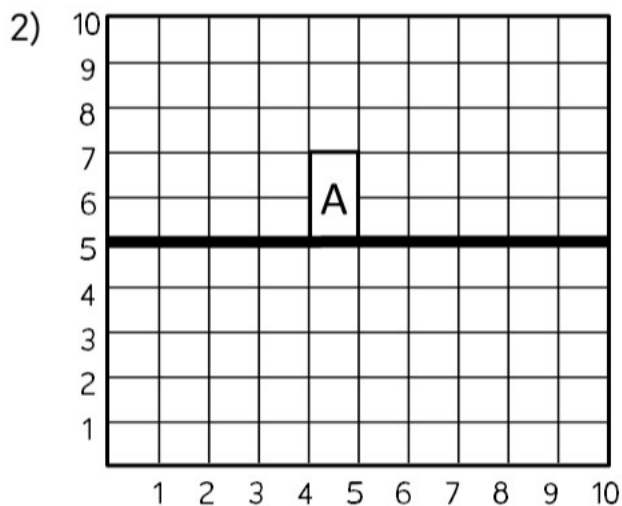
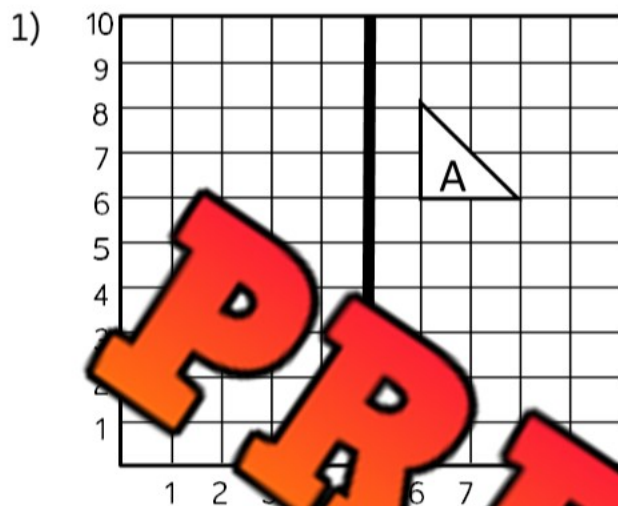


PREVIEW

Reflecting Shapes - Cartesian Plane

Questions

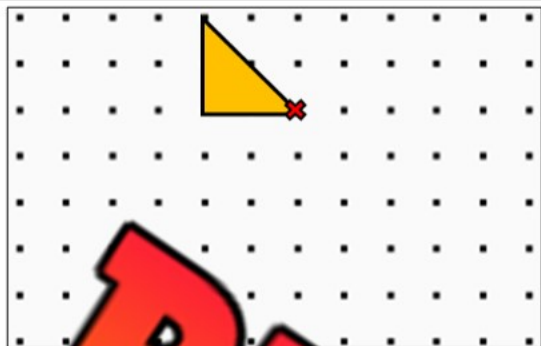
Reflect the shapes across the mirror line



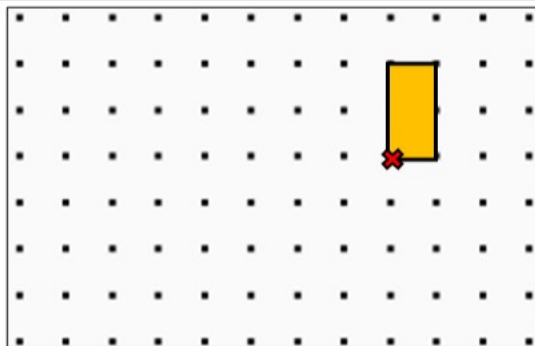
Drawing Rotations

Questions

Rotate the shapes around the point marked ✕



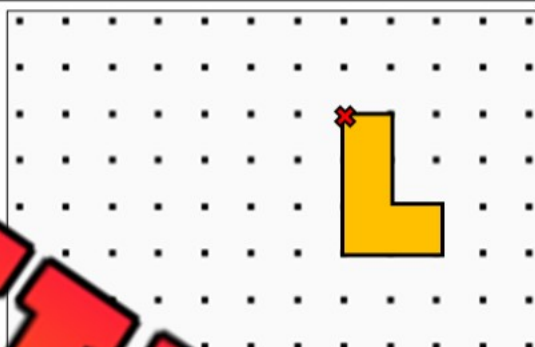
1) 90° clockwise rotation



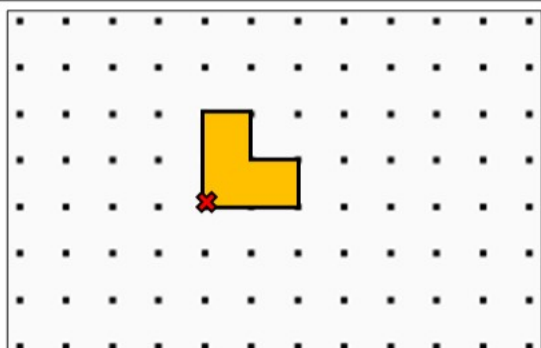
2) 180° clockwise rotation



3) 90° counter-clockwise rotation



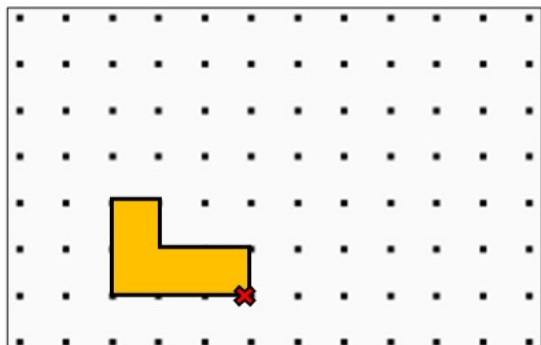
4) 360° clockwise rotation



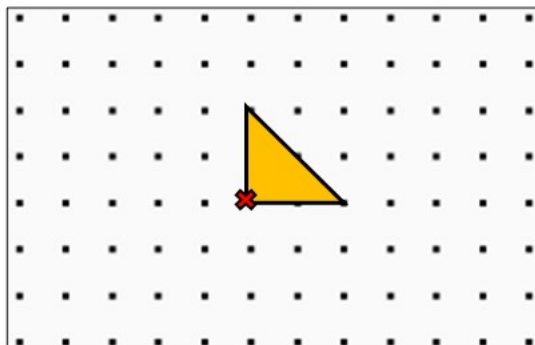
5) 90° counter-clockwise rotation



6) 180° counter-clockwise rotation



7) 90° clockwise rotation

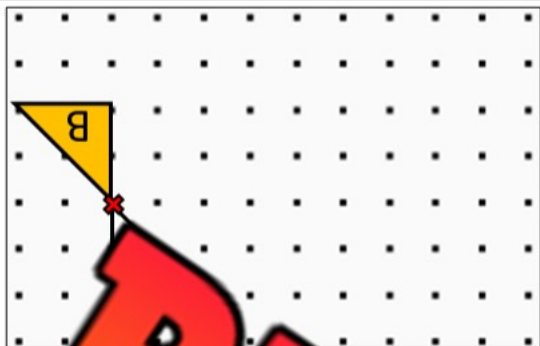


8) 180° counter-clockwise rotation

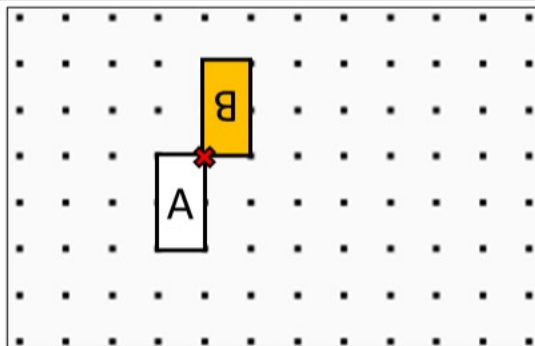
Describing Rotations

Questions

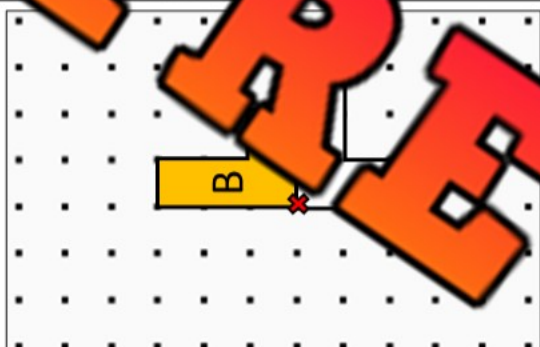
Describe the rotations. Shape A is the original shape



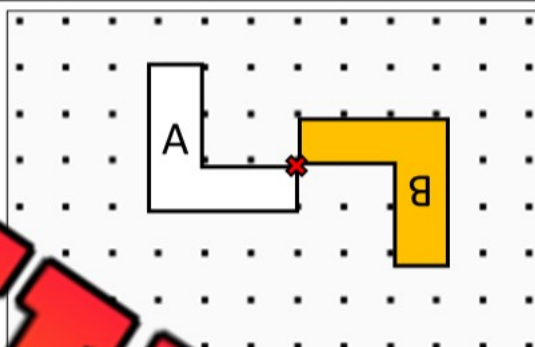
1) _____



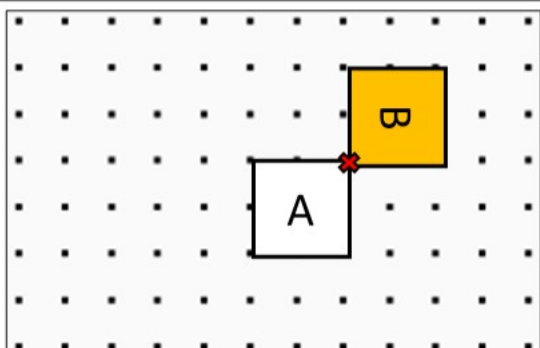
2) _____



3) _____



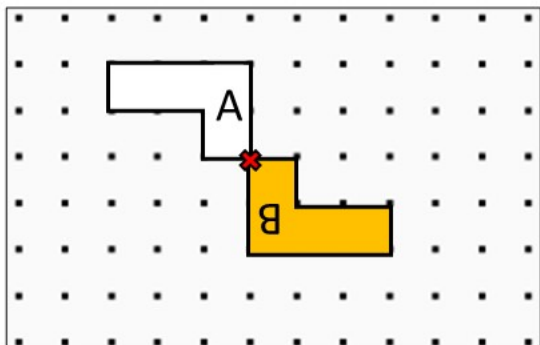
4) _____



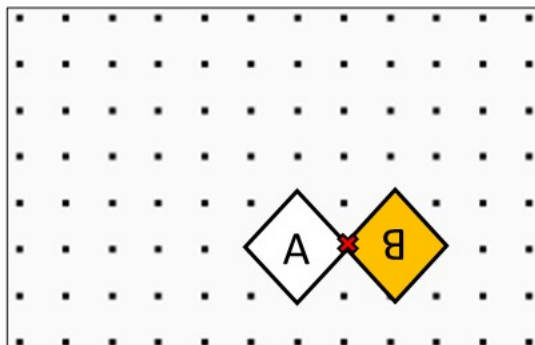
5) _____



6) _____

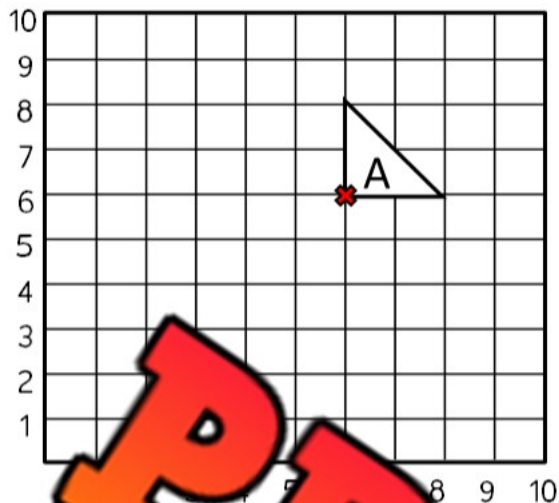


7) _____

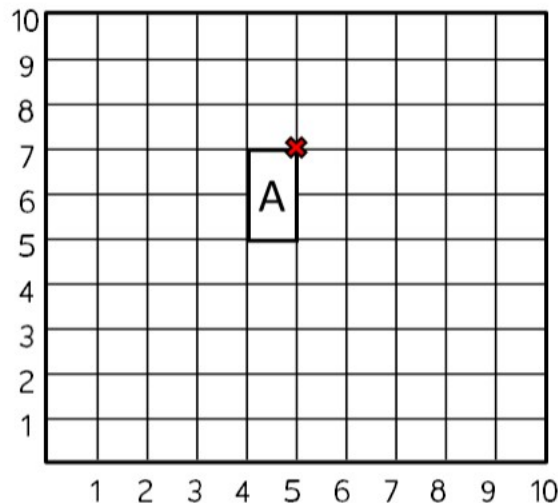


8) _____

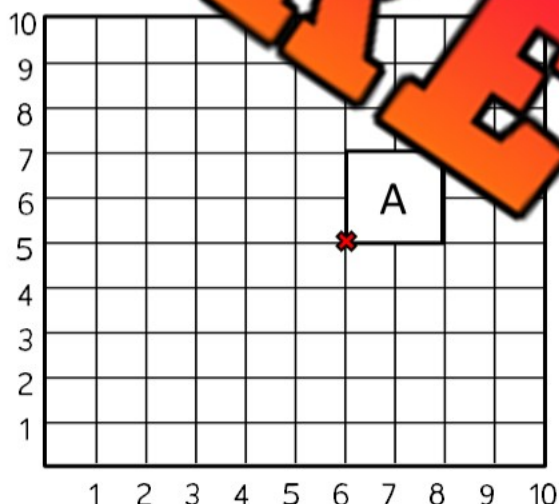
Rotating Shapes - Cartesian Plane



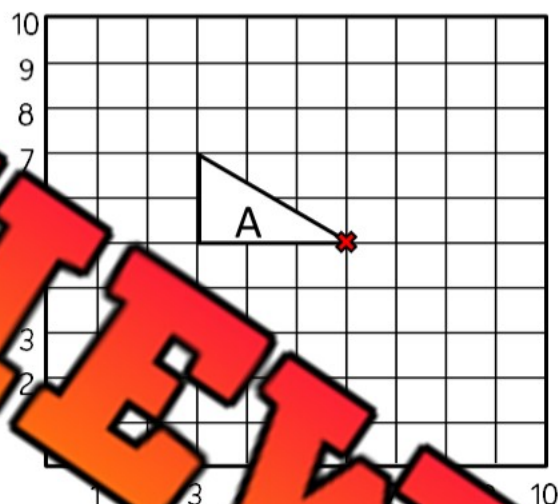
1) 180°



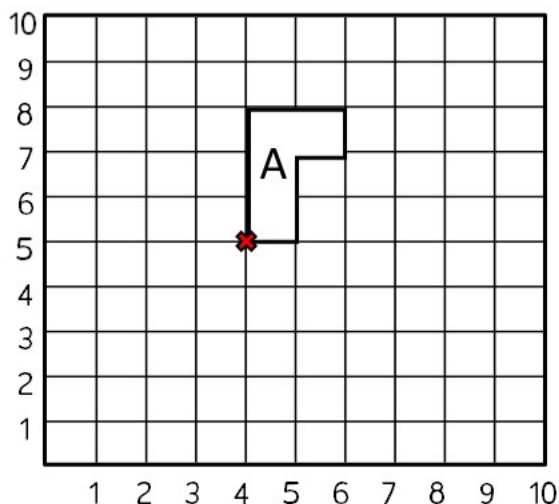
2) 90° counter-clockwise rotation



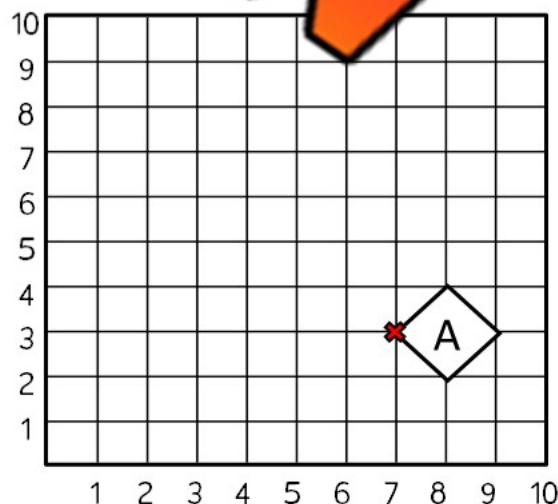
3) 90° clock-wise rotation



4) 90° clockwise rotation



5) 180° rotation



6) 90° counter-clockwise rotation

Transformations - Congruency

Questions

Are the shapes congruent? Which transformation is it?

1)

Congruent Yes No

Type

2)

Congruent Yes No

Type

3)

Congruent Yes No

Type

4)

Congruent Yes No

Type

5)

Congruent Yes No

Type

6)

Congruent Yes No

Type

7)

Congruent Yes No

Type

8)

Congruent Yes No

Type

9)

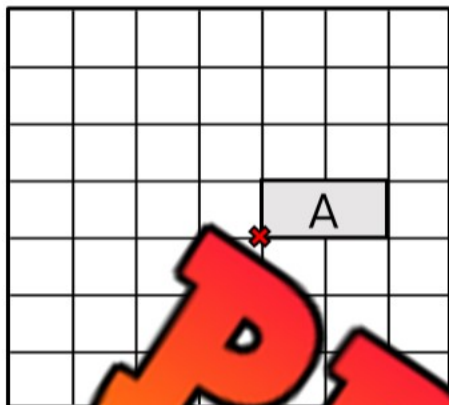
Congruent Yes No

Type

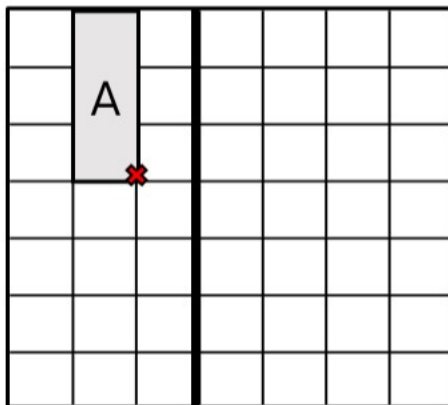
Performing Multiple Transformations

Questions

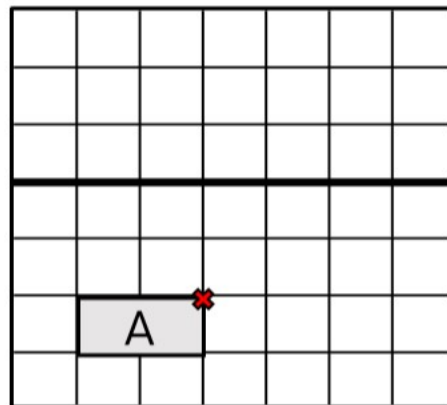
Complete the following combination of transformations



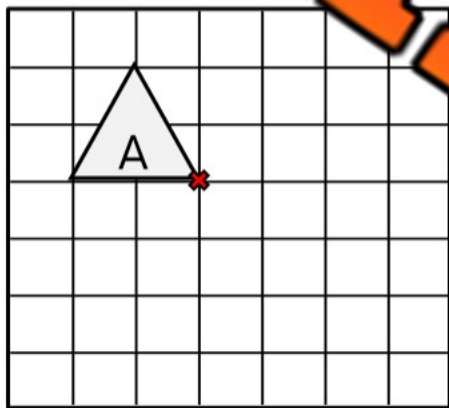
- 1) 180° rotation,
translate up



- 2) Reflect,
rotate 180°



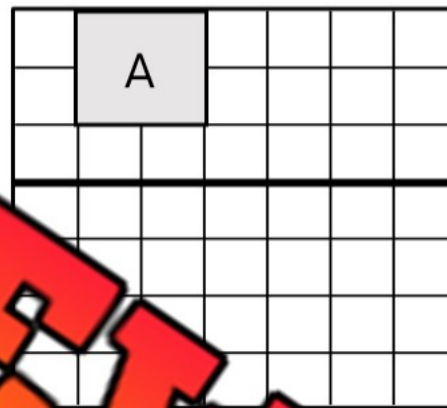
- 3) rotate 90° clockwise,
reflect



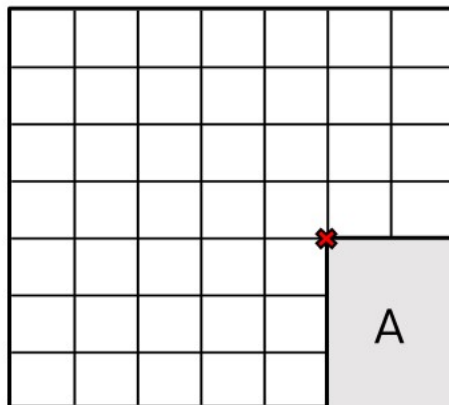
- 4) 90° counterclockwise
rotation, translate right 3



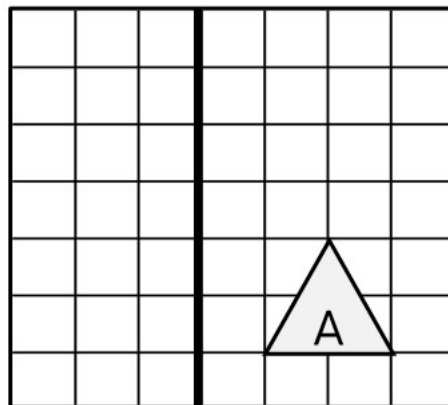
- 5) Translate down 3,
reflect



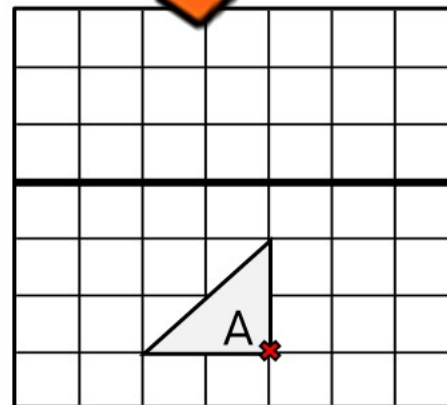
- 6) Reflect



- 7) 180° rotation, translate
left 3

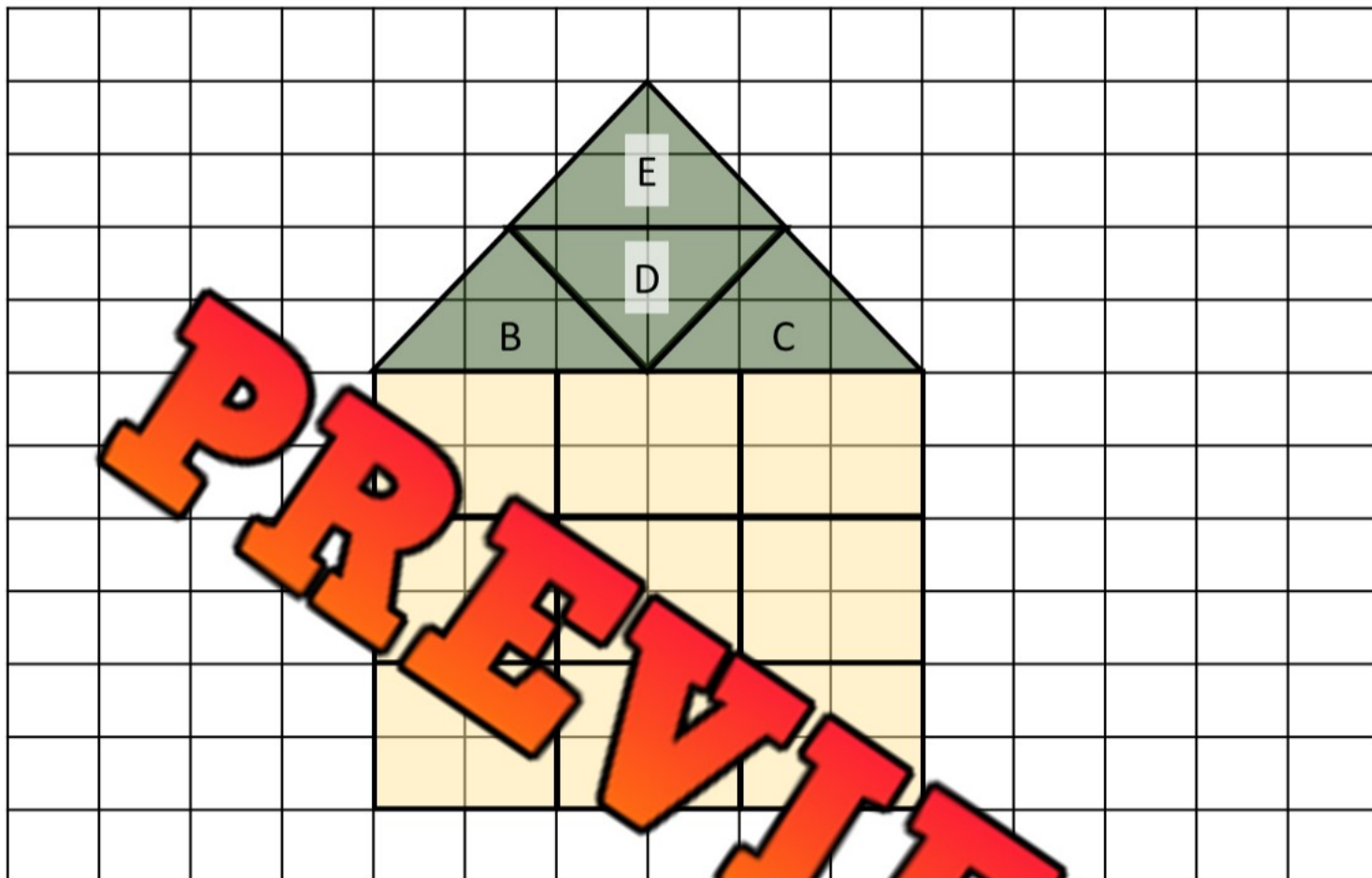


- 8) Reflect,
translate up 2



- 9) Rotate 90° clockwise,
reflect

Describing Transformations in a Design



Questions

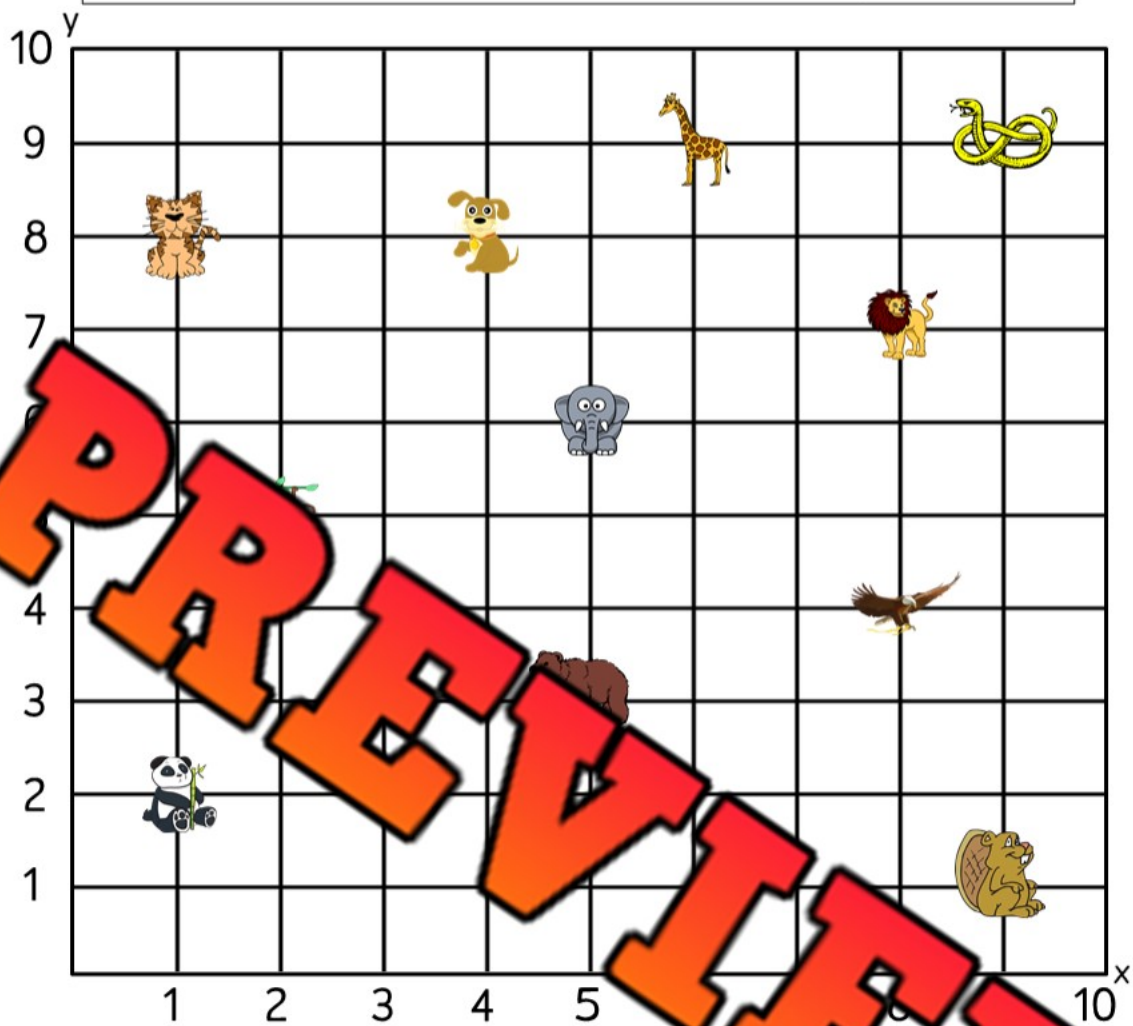
Answer the questions below

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

1) _____

2) _____

Using a Coordinate System



Questions Label the objects on the grid by using the x and y axis

Symbol	Coordinates (x, y)
	(9, 9)
	(____, ____)
	(____, ____)
	(____, ____)
	(____, ____)

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

Name: _____

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Curriculum Connection
SS.8**Using A Coordinate Grid - Challenge****Questions**

Write the letters on the grid according to the coordinates

Letter	Coordinates (x, y)
A	(25, 55)
B	(65, 25)
C	(35, 80)
D	(15, 30)
E	(80, 30)

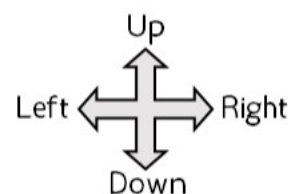
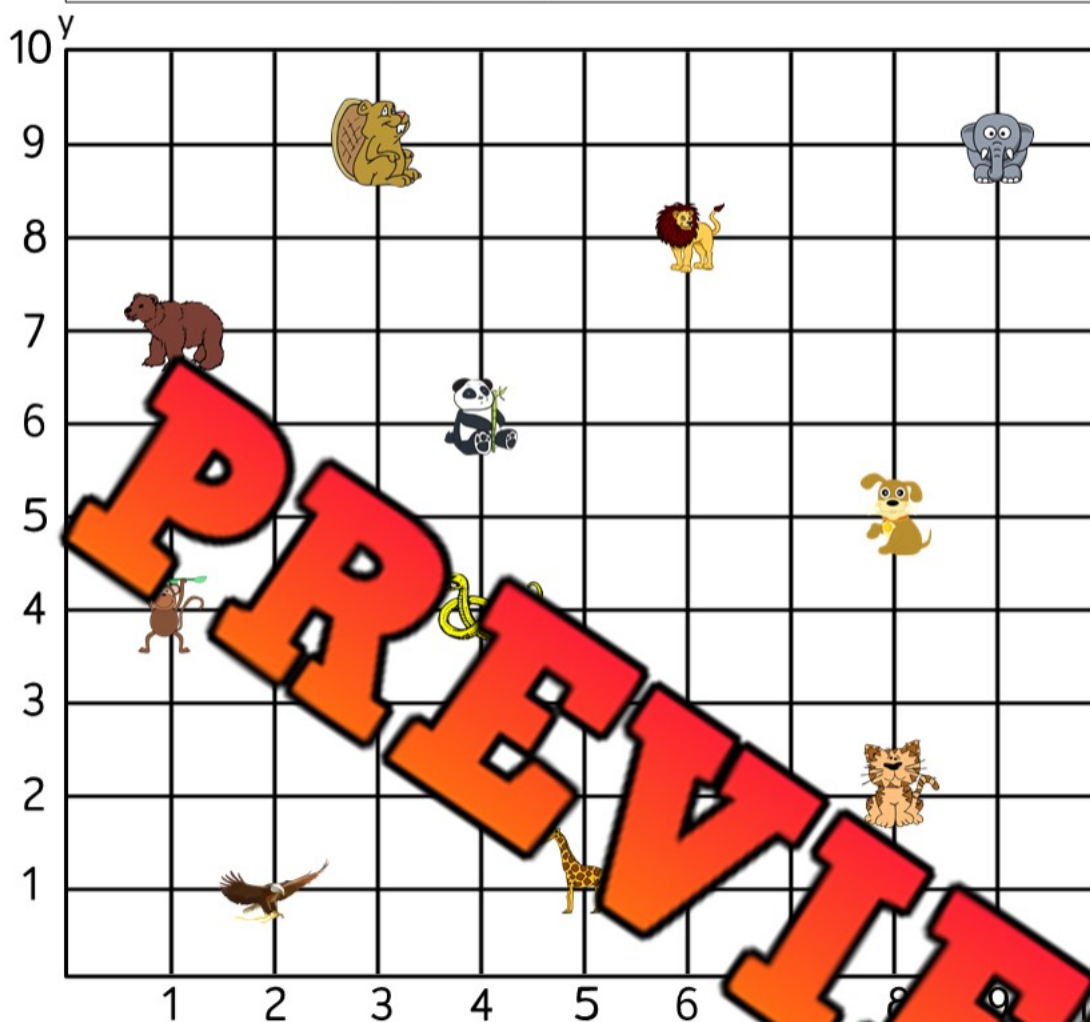
Letter	Coordinates (x, y)
F	(85, 45)
G	(65, 65)
H	(95, 10)
J	(40, 85)
K	(90, 65)

Name: _____

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Curriculum Connection
SS.8

Translating Objects on a Coordinate Grid



Questions

Explain the directions to get from the first symbol to the second

Symbols	Directions
 → 	Go right 1 and down 5
 → 	
 → 	
 → 	
 → 	
 → 	