Unit 11 Area of Polygons and the Coordinate Plane

Date	Target	Assignment	Done!
W 3-9	11.1a	11.1a Worksheet	
R 3-10	11.1b	11.1b Worksheet	
F 3-11	11.1c	11.1c Day 1 Worksheet	
M 3-14	11.1c	11.1c Day 2 Worksheet	
T 3-15	Quiz	Quiz 11.1	
W 3-16	11.2	11.2 Worksheet	
R 3-17	11.3	11.3 Day 1 Worksheet	
F 3-18	11.3	11.3 Day 2 Worksheet	
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T 3-22	Quiz	Quiz 11.2-11.3	
W 3-23	Review	Unit 11 Test Review Worksheet	
R 3-24	Test	Unit 11 Test	
ENJOY YOUR SPRING BREAK!!!			

Target 11.1: Determine and calculate area of triangles, quadrilaterals, and regular polygons

- ***11.1a: Area of Triangles and Parallelograms***
- ***11.1b: Area of Trapezoids, Rhombuses, and Kites***
- ***11.1c: Area of Regular Polygons***

Target 11.2: Use the coordinate plane to classify the quadrilateral

Target 11.3: Using the coordinate plane, calculate the perimeter and area of the figure

Name: _____

11.1a - Areas of Triangles and Parallelograms

Target 1: Determine and calculate area of triangles, quadrilaterals, and regular polygons

Vocabulary:

Draw and take notes here

Annotate Here

What is the formula to find the area of a square?

Area of a Square

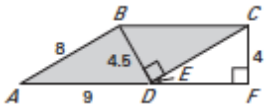
The area of a square is the _____ of the length of its side.

Area of a Parallelogram

The area of a parallelogram is the product of a _____ and its cooresponding _____ .

Example 1: Use a formula to find area

Find the area of parallelogram ABCD



Area of a Triangle

The area of a triangle is _____ the product of a _____ and its corresponding _____.

Example 2: Solve for unknown measures

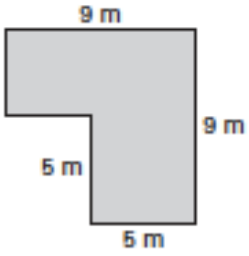
The base of a triangle is four times its height. The area of the triangle is 50 square inches. Find the base and height.

Area Addition Postulate

The area of a region is the _____ of the areas of its nonoverlapping parts.

Example 3: Solve a multi-step problem

Vacuum A robotic vacuum cleaner can clean 2 square meters of carpet in **8 minutes**. About how **long** does it take for it to clean a carpet covering a room with the dimensions on the right?



YOU TRY NOW!

1. A parallelogram has an area of 133 square feet and a height of 19 feet. What is the length of the base?

Annotate Here

Write down two questions that you have.

1)

2)

11.1b – Area of Trapezoids, Rhombuses, and Kites

Target 1: Determine and calculate area of triangles, quadrilaterals, and regular polygons

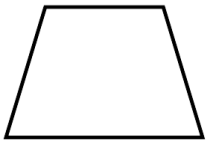
Vocabulary:

Height of a trapezoid: _____

_____

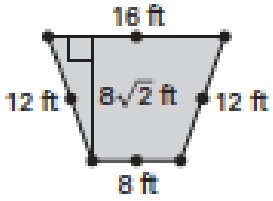
Area of a Trapezoid

The area of a trapezoid is one half the product of the height and the sum of the lengths of the bases.



Example 1: Find the area of a trapezoid

Beavers To prevent beavers from damming a drainage pipe, the trapezoid-shaped fence shown is placed at the pipe. Approximate the area of the enclosed fence.



Area of a Rhombus

The area of a rhombus is one half the product of the lengths of the diagonals

Draw here

Annotate Here

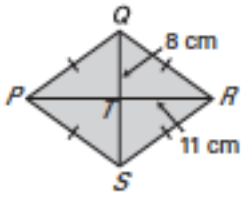
Area of a Kite

The area of a kite is one half the product of the lengths of the diagonals

Draw here

Example 2: Find the area of a rhombus

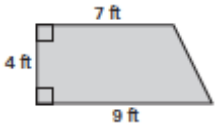
Find the area of the rhombus



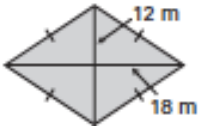
YOU TRY NOW!

Find the area of the figure

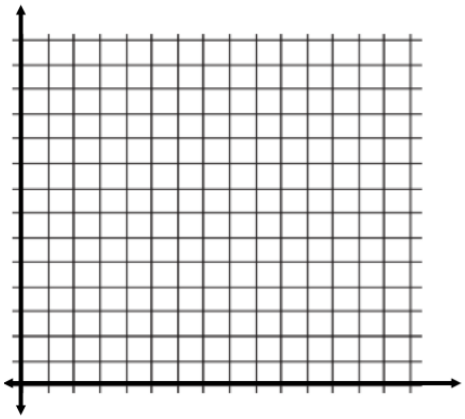
1.



2.



3. Find the area of a rhombus with vertices M(2, 4), N (5, 6), P(8, 4), and Q (5, 2).



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What is the distance formula?

11.1c – Areas of Regular Polygons

Target 1: Determine and calculate area of triangles, quadrilaterals, and regular polygons

Vocabulary:

Center of a Polygon: _____

_____

Radius of a Polygon: _____

_____

Apothem of a Polygon: _____

_____

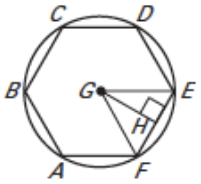
Central Angle of a Regular Polygon: _____

_____

Example 1: Find angle measures in a regular polygon

In the diagram, ABCDEF is a regular hexagon in ⊙G. Find each angle measure.

a. m∠EGF

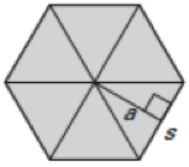


b. m∠EGH

c. m∠HEG

Area of a Regular Polygon

The area of a regular _____ with side lengths_____ is half the the product of the apothem _____ and the perimeter _____ .



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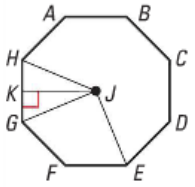
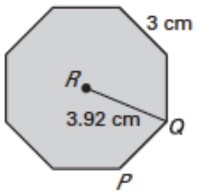
Label Me!



What are the two properties that make

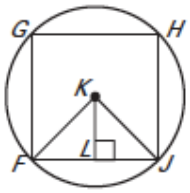
Example 2: Find the area of a regular polygon

Coaster A wooden coaster is regular octagon with 3-centimeter sides and radius of about 3.92 centimeters. What is the area of the coaster?

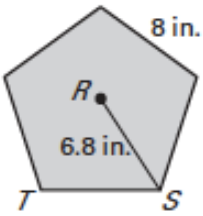


YOU TRY NOW!

1. In the diagram, FGHJ is a square inscribed in ⊙K. Find m∠FKJ and m∠KJF.



2. The radius of the regular pentagon is about 6.8 inches. Find the area of the to the nearest square inch.



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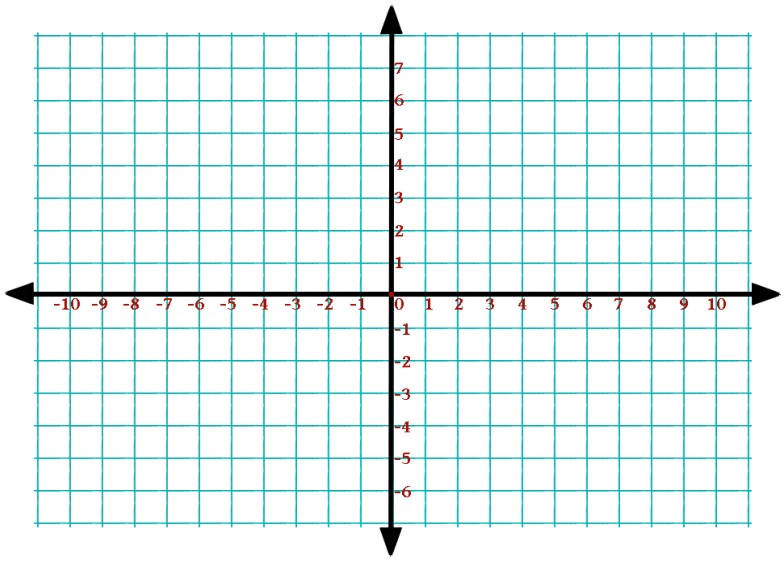
11.2 – Determine the Type of Quadrilateral Using the Coordinate Plane

Target 2: Use the coordinate plane to classify the quadrilateral

YOUTUBE VIDEO: "Determine a quadrilateral with coordinate geometry"

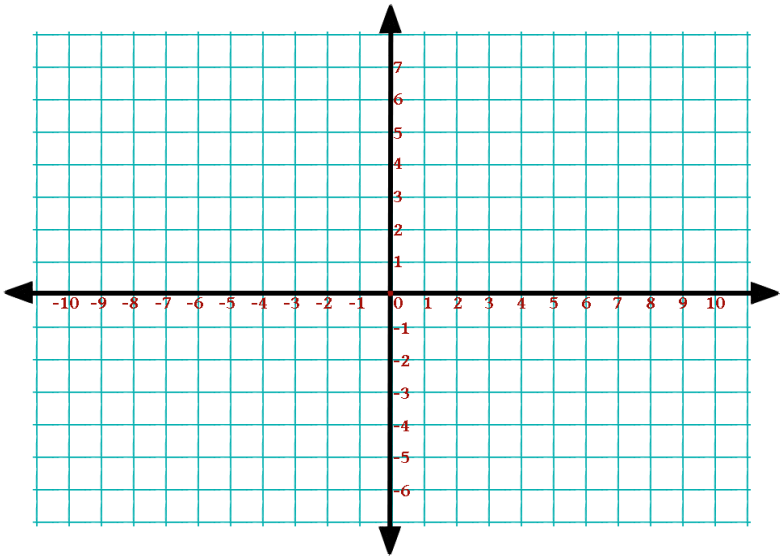
Example 1: Using Coordinate Geometry to classify the type of polygon

Given the quadrilateral ABCD with A (-4, 1), B(-2, 4), C (4, 0), and D (2, -3). What shape is ABCD? Prove it. Show all work and explain your choice. Find the point where the diagonals intersect.



YOU TRY NOW!

Quadrilateral ABCD with A (4, 7), B(9, 7), C (6, 3), and D (1, 3). What shape is ABCD? Prove it. Show all work and explain your choice. Find the point where the diagonals intersect.



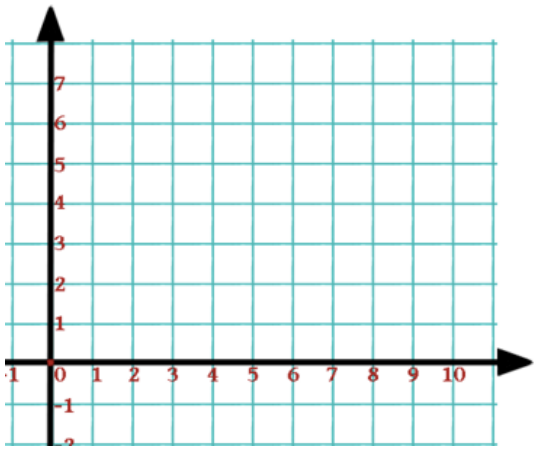
11.3– Find the Perimeter and Area of a Figure

Target 3: Using the coordinate plane, calculate the perimeter and area of the figure

YOUTUBE VIDEO: "area and perimeter of polygons in a coordinate plane"

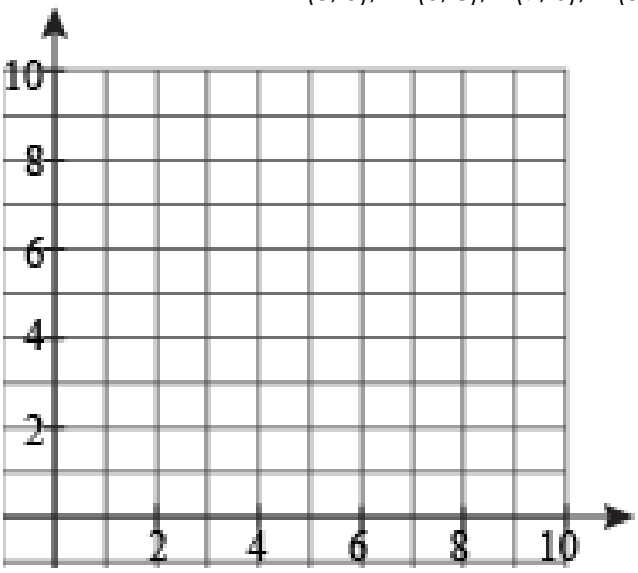
Example 1: Draw and classify the polygon with the given vertices. Find the perimeter and area.

F (2, 8), G(4, 4), H (2, 0)



Example 2: Find the area of the polygon with vertices

L (3, 5), M (6, 8), N(9, 6), P (5, 0)



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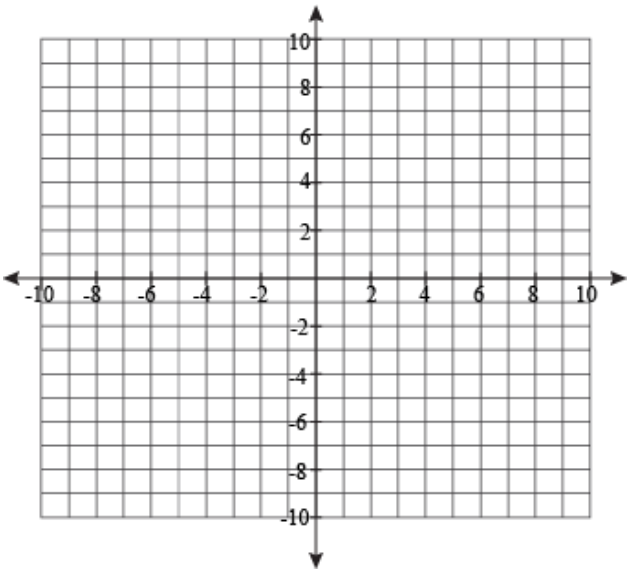
What is the Pythagorean Theorem?

YOU TRY NOW!

Find the perimeter area of of ABCD with vertices
A(-3, 0), B(3, 2), C(4, -1) and D(-2, -3)



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