Unit: Geometry
Student Handout 1

Name _____

Date _____Pd_____

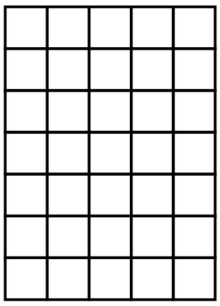
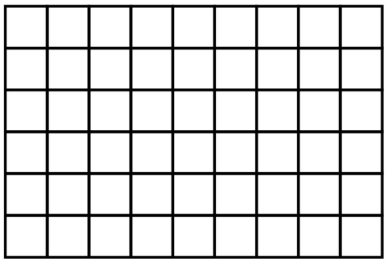
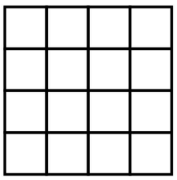
AREA OF RECTANGLES AND PARALLELOGRAMS

AREA OF RECTANGLES

- Area is the _____ _____ of a two-dimensional figure. We can think of it as the square units that a shape covers.
- Use the formula _____, where "b" is the length of the _____, and "h" is the height of the rectangle.
- Area is measured in _____ units:

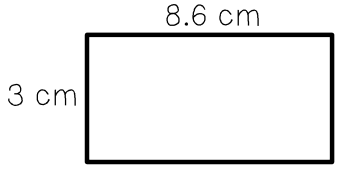
Ex: inches • inches = ____ feet • feet = ____ meters • meters = ____

Count the number of squares to find the dimensions and area of each rectangle. Then use the area formula to verify your answer.

RECTANGLE 1	RECTANGLE 2	RECTANGLE 3
		
Formula: _____	Formula: _____	Formula: _____
Plug in Values: _____	Plug in Values: _____	Plug in Values: _____
Area: _____	Area: _____	Area: _____

Determine the area of each rectangle below.

1.

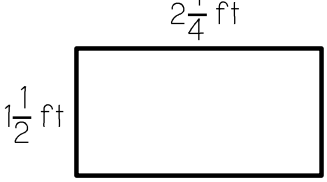


Formula: _____

Plug in Values: _____

Area: _____

2.



Formula: _____

Plug in Values: _____

Area: _____

WRITING FORMULAS

- We can also solve for any missing piece of information in the formula by solving a _____ equation.

Ex: A = bh can be written as _____ .

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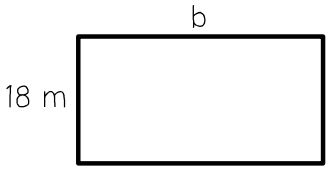
Use your understanding of the area of rectangles to answer the questions below.

3. The area of the rectangle is 162 m^2.



Formula: _____

Plug in Values: _____

Value of b: _____

4. Circle all of the formulas below that could be used to find the height of a rectangle with a base of 11 in and an area of 120 in^2.

a. $120 = 11(11)$

b. $11 = 120(h)$

c. $120 = 11(h)$

d. $h = \frac{120}{11}$

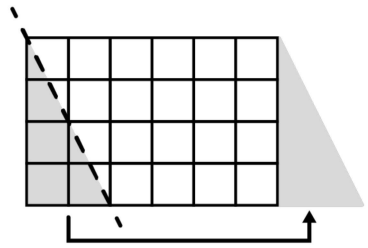
e. $h = \frac{11}{120}$

AREA OF PARALLELOGRAMS

- The dimensions of a parallelogram are also referred to as the base and height.
- Use the formula _____, where "b" is the length of the base and "h" is the height of the parallelogram, which makes a _____ with the base.

Count the number of squares to find the dimensions and area of parallelogram 1. Then use the area formula to find the area of parallelograms 2 and 3.

PARALLELOGRAM 1

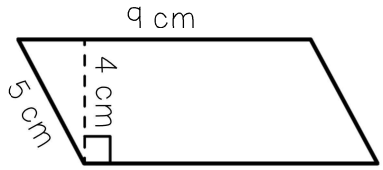


Formula: _____

Plug in Values: _____

Area: _____

PARALLELOGRAM 2

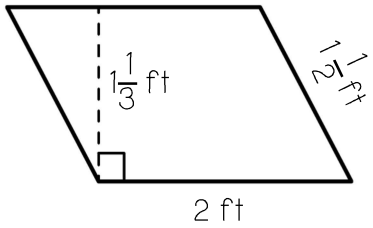


Formula: _____

Plug in Values: _____

Area: _____

PARALLELOGRAM 3



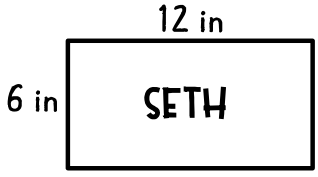
Formula: _____

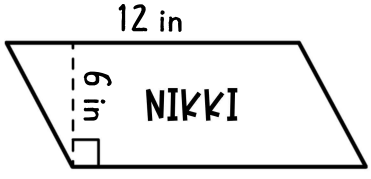
Plug in Values: _____

Area: _____

Use your knowledge of area to answer the question below.

5. Mrs. Lewis asked students to sketch a figure with a base of 12 inches and a height of 6 inches. Did the students complete the task correctly? Describe how the area of a rectangle and the area of a parallelogram with the same dimensions are related.





Summarize today's lesson:

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Unit: Geometry
Homework 1

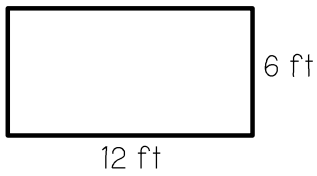
Name _____

Date _____Pd_____

AREA OF RECTANGLES AND PARALLELOGRAMS

Solve the problems below. Be sure to show your work. Figures are not drawn to scale.

1. Determine the area of the rectangle.

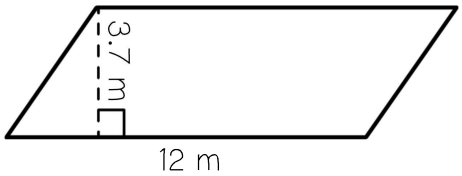


Formula: _____

Plug in Values: _____

Area: _____

2. Determine the area of the parallelogram.

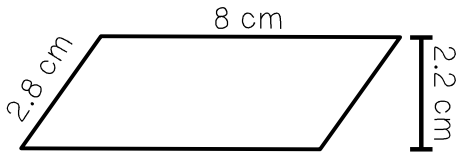


Formula: _____

Plug in Values: _____

Area: _____

3. What is the area of the parallelogram?

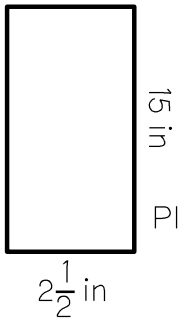


Formula: _____

Plug in Values: _____

Area: _____

4. What is the area of the rectangle?



Formula: _____

Plug in Values: _____

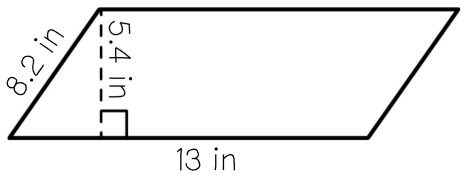
Area: _____

Read each question, sketch a picture, and then solve for the area.

5. A broken rectangular-shaped window is being replaced. It measures 24 inches by 18 inches. How many square inches of glass are needed to repair the window?

6. A parallelogram is being painted on the wall of a playroom. The parallelogram measures 7.3 meters in length and has a height of 5 meters. How many square meters of paint are needed?

7. Amy solved the following question on her math test. Is she correct? If not, explain why and solve the problem correctly.



$A = bh$

$A = 13\ (8.2)$

$A = 106.6\ in^2$

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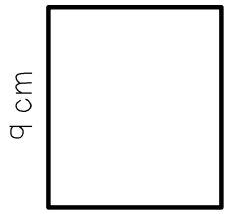
Unit: Geometry
Student Handout 2

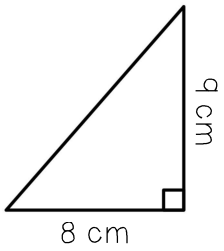
Name _____

Date _____Pd_____

AREA OF TRIANGLES AND TRAPEZOIDS

Two different figures are sketched and labeled below. Complete the t-chart to compare their similarities and differences.



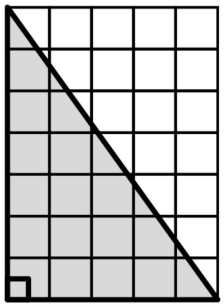
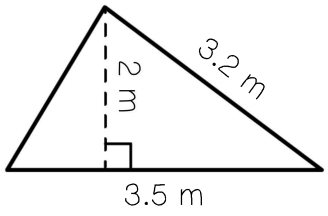
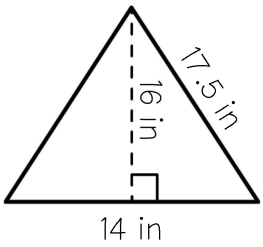


SIMILARITIES	DIFFERENCES

a. If the formula for finding the area of a rectangle is A=bh, how could you describe the formula for finding the area of a triangle?

b. What is the area of the rectangle? What is the area of the triangle? Was your hypothesis correct?

Count the dimensions of the first figure below and determine the area. Then, use the formula to find the area of triangles 2 and 3.

TRIANGLE 1	TRIANGLE 2	TRIANGLE 3
		
Formula: _____ Plug in Values: _____ Area: _____	Formula: _____ Plug in Values: _____ Area: _____	Formula: _____ Plug in Values: _____ Area: _____

How do you determine the height of the triangle?

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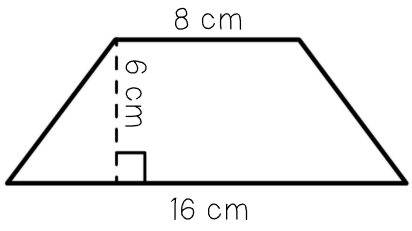
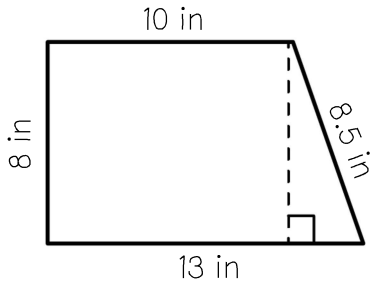
Decompose (take apart) the trapezoids below into familiar shapes. Then, find the area of each trapezoid.

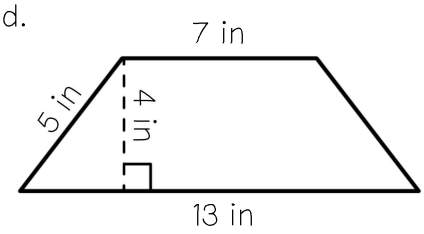
TRAPEZOID 1	TRAPEZOID 2
	

AREA OF TRAPEZOIDS

- A trapezoid is one or two _____ and a _____ combined.
- To find the area, use the formula _____, where:
  - b_1 is the _____
  - b_2 is the _____ and
  - h is the _____ of the trapezoid.

Use your understanding of area to answer the questions below.

1. Use a formula to determine the area of the trapezoid.

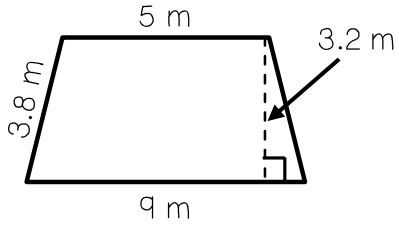


Formula: _____

Plug in Values: _____

Area: _____

2. Use a formula to determine the area of the trapezoid.

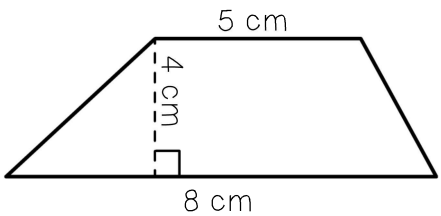


Formula: _____

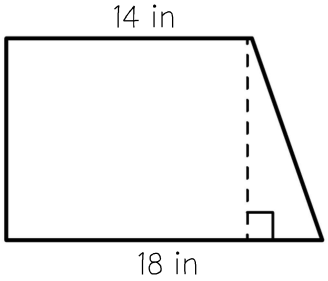
Plug in Values: _____

Area: _____

3. Betsy has calculated the area of the figure below to be 52 cm^2. Determine if she is correct or incorrect, then explain.



4. The trapezoid below has an area of 192 in^2. What is the height of the trapezoid?



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Unit: Geometry
Homework 2

Name _____

Date _____Pd_____

AREA OF TRIANGLES AND TRAPEZOIDS

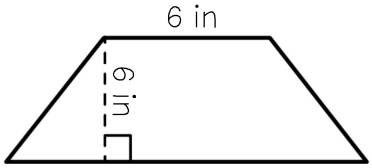
Match each correct answer to a letter and complete the riddle below. Not all choices will be used.

1

Find the area of a right triangle with a height of $8\frac{1}{2}$ feet and a base of 15 feet.

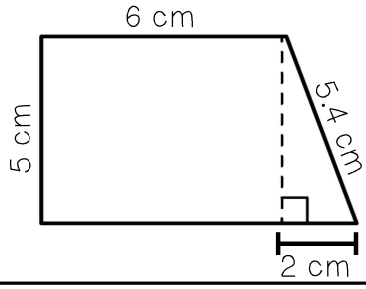
2

What is the area of the trapezoid?



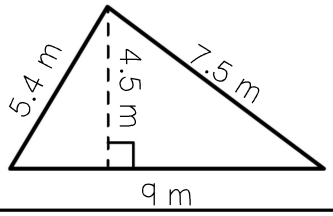
3

Find the area of the trapezoid at the right.



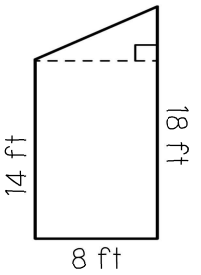
4

Find the area of the triangle below.



5

Find the area of the trapezoid at the right by decomposing it into familiar shapes.

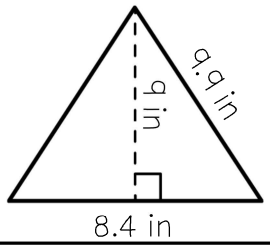


6

A triangle has an area of 42 cm^2. The height of the triangle is 14 centimeters. What is the length of the base of the triangle?

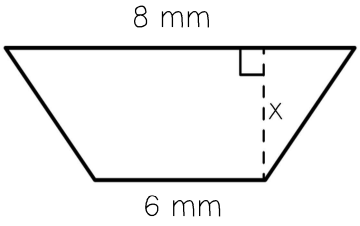
7

What is the area of the triangle?



8

A trapezoid has an area of 35 mm^2. What is the height of the trapezoid?



L: 36	A: 5	F: 12.15	H: 56	R: 37.8	I: 127.5
S: 50.4	C: 12	U: 20.25	N: 35	P: 108	A: 128
R: 63.75	Q: 3	W: 35.4	E: 6	G: 54	T: 24

WHAT DO GEOMETRY TEACHERS HAVE DECORATING THEIR FLOORS?

___	___	___	___	___	___	___	___	___
5	3	8	1	6	8	7	4	2

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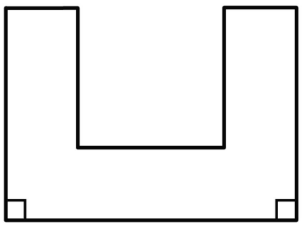
Unit: Geometry
Student Handout 3

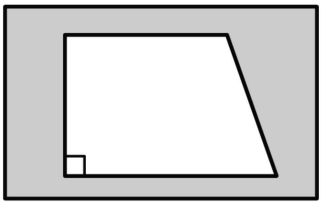
Name _____

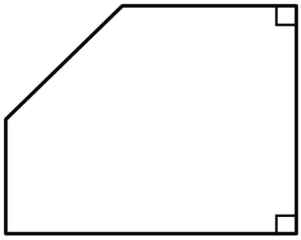
Date _____ Pd _____

AREA OF COMPOSITE FIGURES

In art class, Mrs. Price is discussing how figures can be decomposed into different shapes. She projects the images below on a screen. Discuss and label the different ways you could decompose these figures into familiar shapes.



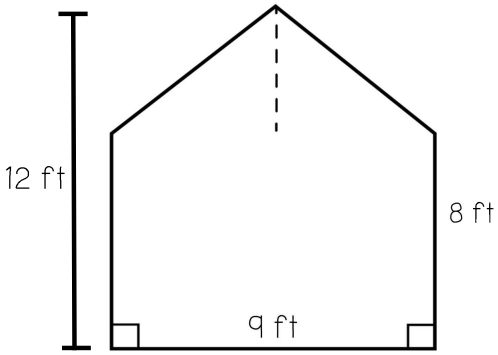




COMPOSITE FIGURES

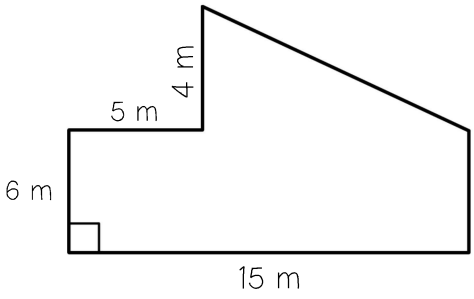
- A _____ figure is made up of two or more shapes.
- We can find the _____ of a composite figure by decomposing the figure into familiar shapes. Then _____ or _____ the area of each shape.

Decompose the figures below. Then, use the graphic organizer to find the area of each shape.



TOTAL AREA: _____

	SHAPE 1	SHAPE 2
NAME		
FORMULA		
PLUG IN VALUES		
AREA		



TOTAL AREA: _____

	SHAPE 1	SHAPE 2
NAME		
FORMULA		
PLUG IN VALUES		
AREA		

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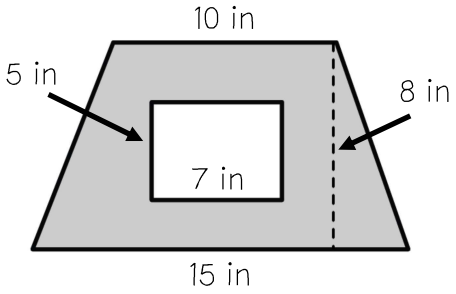
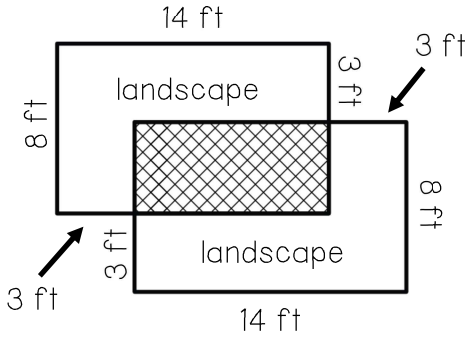
Use your understanding of composite figures to answer the questions below.

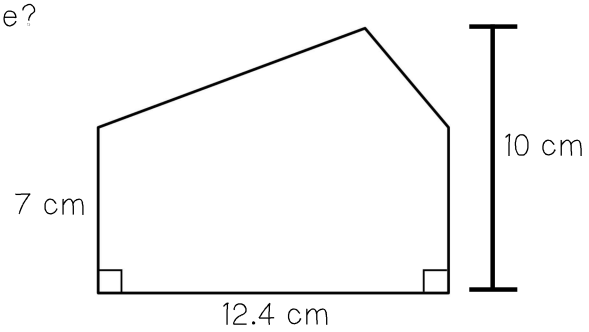
1. A rectangle is inscribed in a trapezoid. Determine the area of the shaded region.



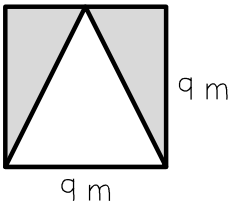
2. A patio is being landscaped with trees and shrubs. How many square feet of landscaping will be around the patio?



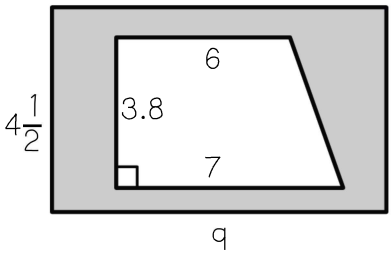
3. A composite figure is created using a rectangle and triangle. What is the area of the figure?



4. Find the area of the shaded region.



5. A trapezoid is inscribed in a rectangle. Amar and Gabby both found the area of the shaded region. Circle the name of student who correctly calculated the area. Explain the other student's mistake.



AMAR

$(9)(4\frac{1}{2}) + (\frac{1}{2})(6+7)(3.8)$

$40.5 + 24.7$

65.2 units^2

GABBY

$(9)(4\frac{1}{2}) - (\frac{1}{2})(6+7)(3.8)$

$40.5 - 24.7$

15.8 units^2

Summarize today's lesson:

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Unit: Geometry
Homework 3

Name _____

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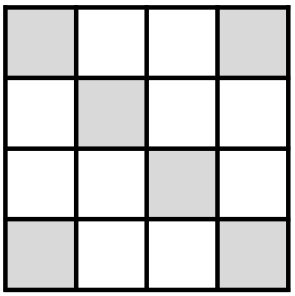
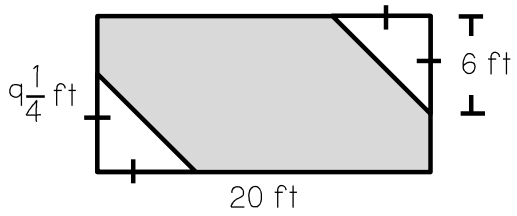
AREA OF COMPOSITE FIGURES

Answer the questions below. Be sure to show your thinking.

1. A 2 ft by 2 ft square is divided into smaller squares and portions are shaded. What is the area of the shaded portion?



2. A garden is sodded in the shaded portion below. How many square feet were covered with sod?



Use the composite figures below to mark each statement as true or false. Justify your choices.

3.

FIGURE A

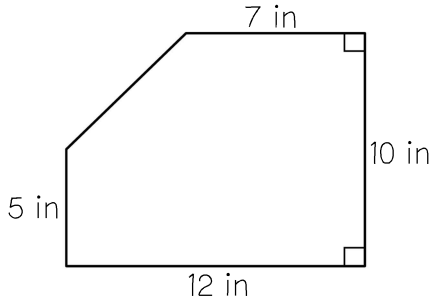
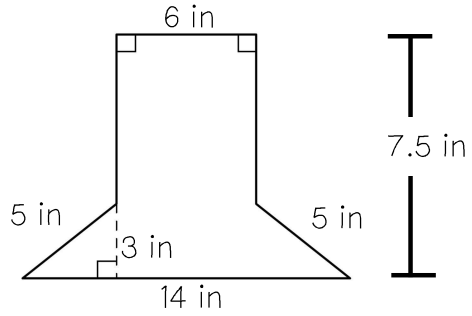


FIGURE B



STATEMENT	T/F?	JUSTIFY
a. The area of figure A can be found by finding the area of a trapezoid.		
b. The area of figure B can be found by decomposing the figure into a rectangle and trapezoid.		
c. Figure B has a total area of 75 in^2.		
d. The area of figure A is 50.5 in^2 more than the area of figure B.		

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Unit: Geometry
Student Handout 4

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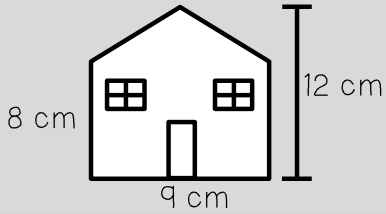
PROBLEM SOLVING WITH COMPOSITE FIGURES

Area can be used to solve real-world problems. Practice solving problems involving composite figures in the space below.

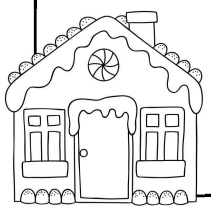
1. Hillary is decorating a gingerbread house and plans to cover the front of the house with icing, not including the windows or door. The windows each measure 2 cm by 2.5 cm and the door measures 2 cm by 3 cm. What is the area of the gingerbread house Hillary will cover with icing?



I KNOW:

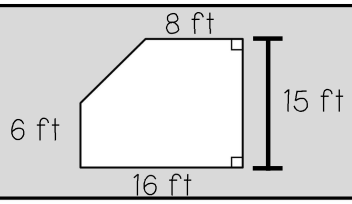
I NEED TO KNOW:

PLAN AND WORK:



SOLUTION:

2. Jordan is building a deck in his backyard shown at the right. The wood is priced at $5.30 per square foot. How much will it cost to build the deck?

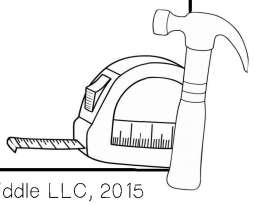


I KNOW:

I NEED TO KNOW:

PLAN AND WORK:

SOLUTION:



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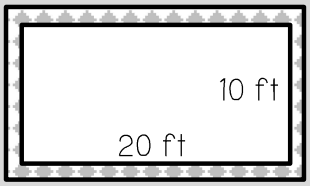
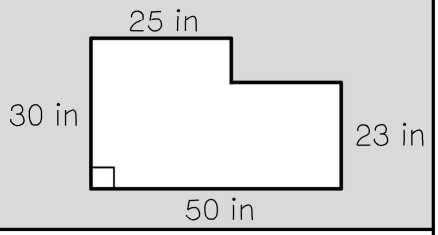
3. Martin is making a stone path border around the pool in his backyard. The pool is in the shape of a rectangle that is 10 feet wide and 20 feet long. He wants to make the border extend 2 feet around each side of the pool. Each stone covers 3 ft^2. How many stones will he need to purchase?



I KNOW:	I NEED TO KNOW:

PLAN AND WORK:	SOLUTION:

4. Brooke is purchasing tile to add a backsplash to her kitchen wall. Each tile covers 25 in^2. If each tile costs $1.75, what is the total amount that Brooke will spend on tile?



I KNOW:	I NEED TO KNOW:

PLAN AND WORK:	SOLUTION:

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Unit: Geometry
Homework 4

Name _____

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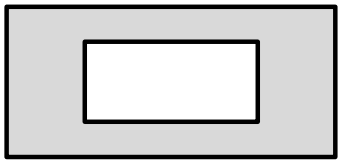
PROBLEM SOLVING WITH COMPOSITE FIGURES

Mr. and Mrs. Harper are planning to install a deck and a garden. Help them determine which of the two design choices below is most cost effective. The deck is shown in gray; the garden is shown in white.

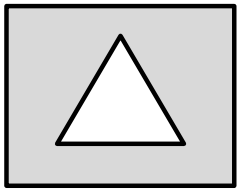
DESIGN A

Deck is 18 feet by 25 feet.
Garden is 9 feet by 12 feet.



DESIGN B

Deck is 21 feet by 20 feet.
Garden has a height of 12 feet and a base of 14 feet.



1. What is the area of the garden in design A? Design B?

2. What is the area of the deck, not including the garden, in design A? Design B?

3. If it costs $4.20 per square foot to install the deck, what is the cost for design A? Design B?

4. If it costs $1.40 per square foot to install the garden, what is the cost for design A? Design B?

5. If Mr. and Mrs. Harper would like to choose the most affordable design, which one should they choose? How much money will they save?

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