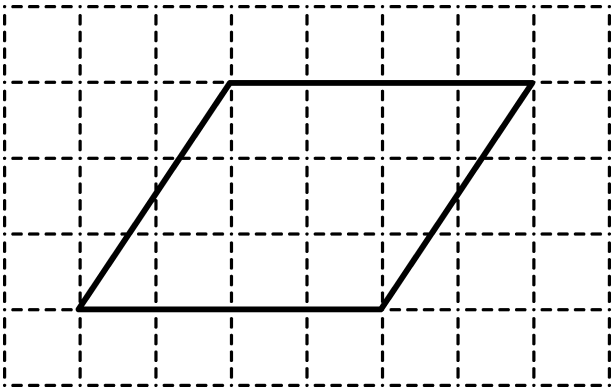
NAME _____

Area Formulas

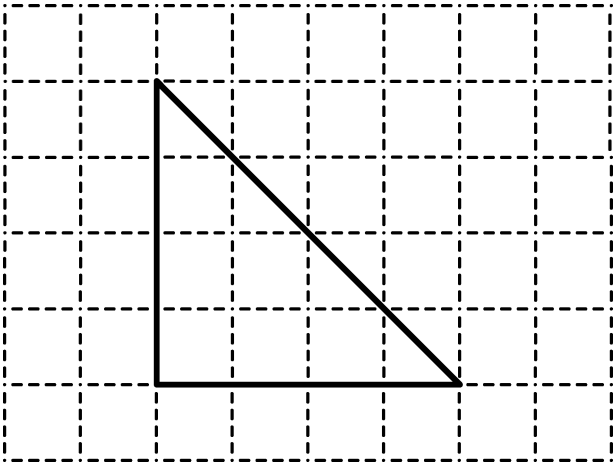
Use the formulas to find the area of each polygon below. Then use the grid to make sure the answers are accurate.

1 The area of a rectangle is *base* × *height or bh*

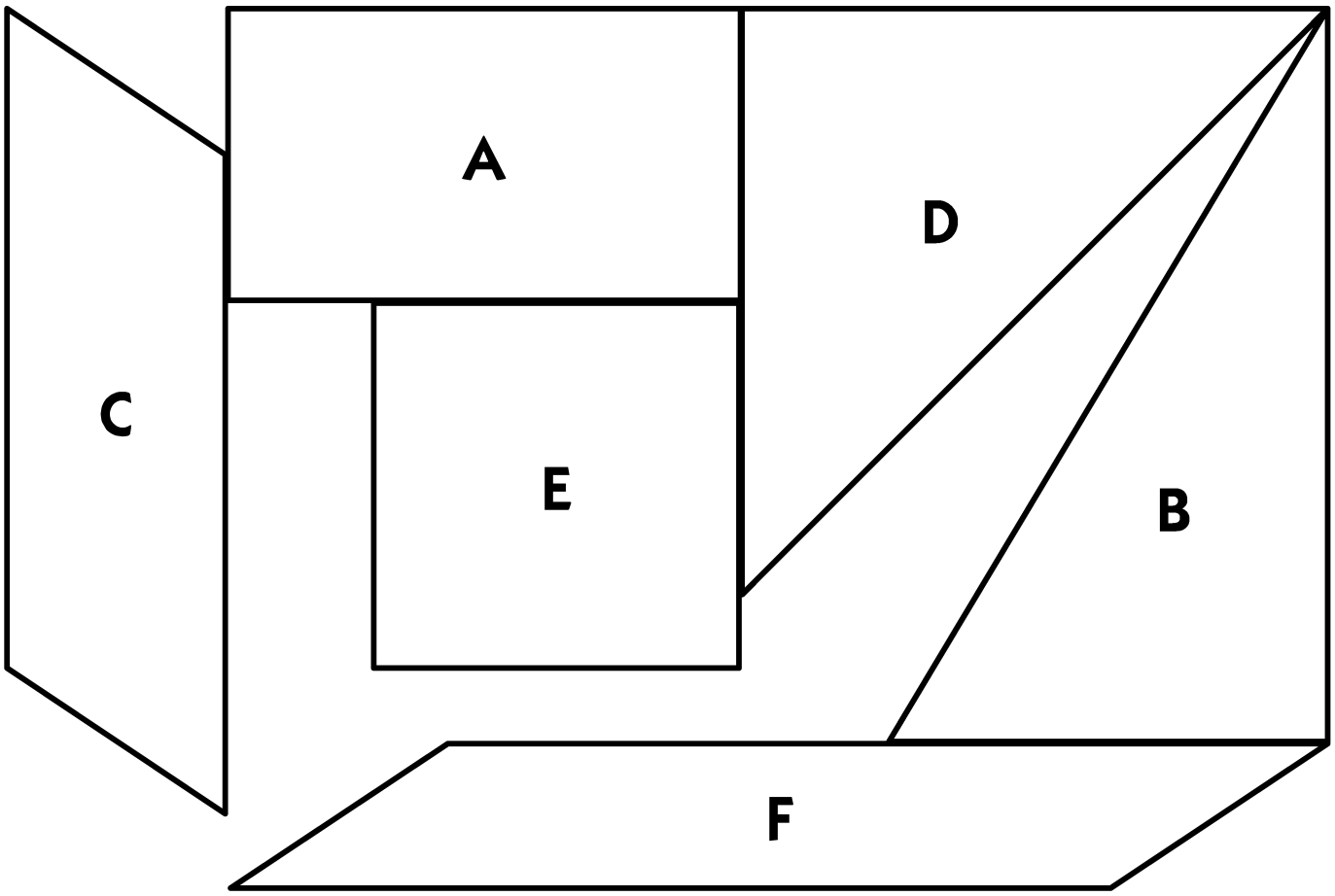
2 The area of a parallelogram is *base* × *height or bh*



3 The area of a triangle is *one half base* × *height or* $\frac{1}{2}bh$



Polygons to Order



NAME _____

Polygons Record Sheet

1 Work with your partner to carefully cut out the 6 polygons and put them in order, from smallest to largest area.

2 After you've agreed on the order, write the letters of the polygons where you think they belong in the boxes below.

Smallest Area → Largest Area					

3 Estimate the area of each polygon and find its actual area in square centimeters. Remember to label your work with the correct units (square centimeters). Record your work on the chart below.

Polygon Letter	Your Estimate in square centimeters (sq. cm)	Actual Area in square centimeters (sq. cm)

4 Glue the polygons onto a large sheet of paper in order from smallest area to largest area. Label each polygon with its base, height, and area. For each polygon, use sketches, numbers and/or words to show how you found the area.

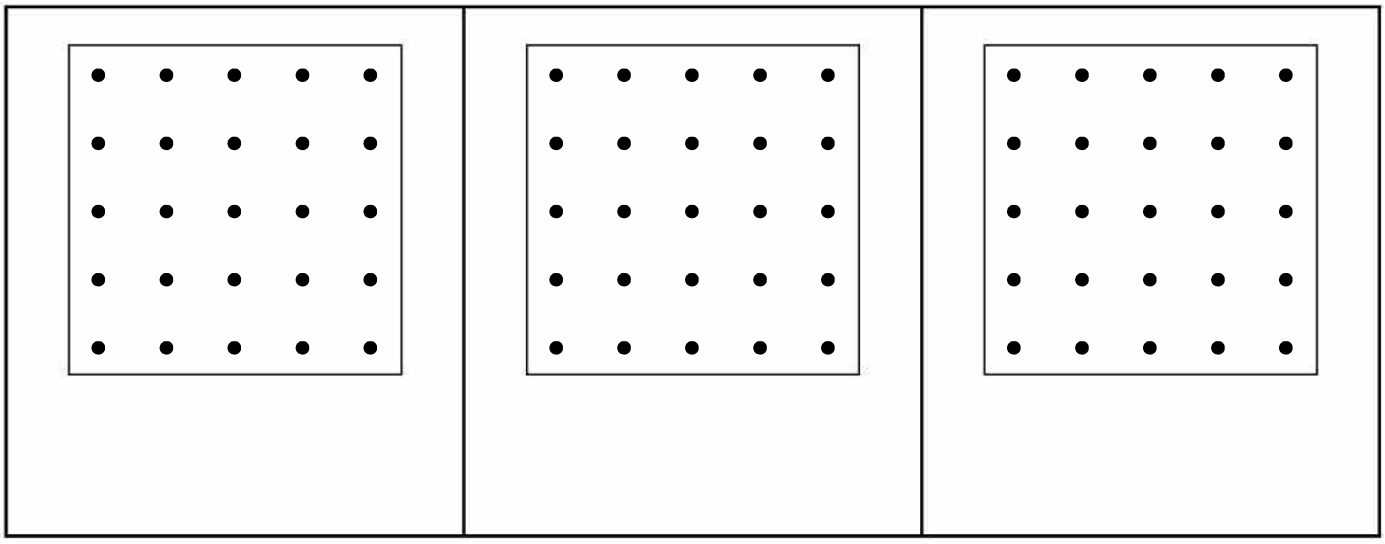
NAME _____

Set D9 ★ Independent Worksheet 1

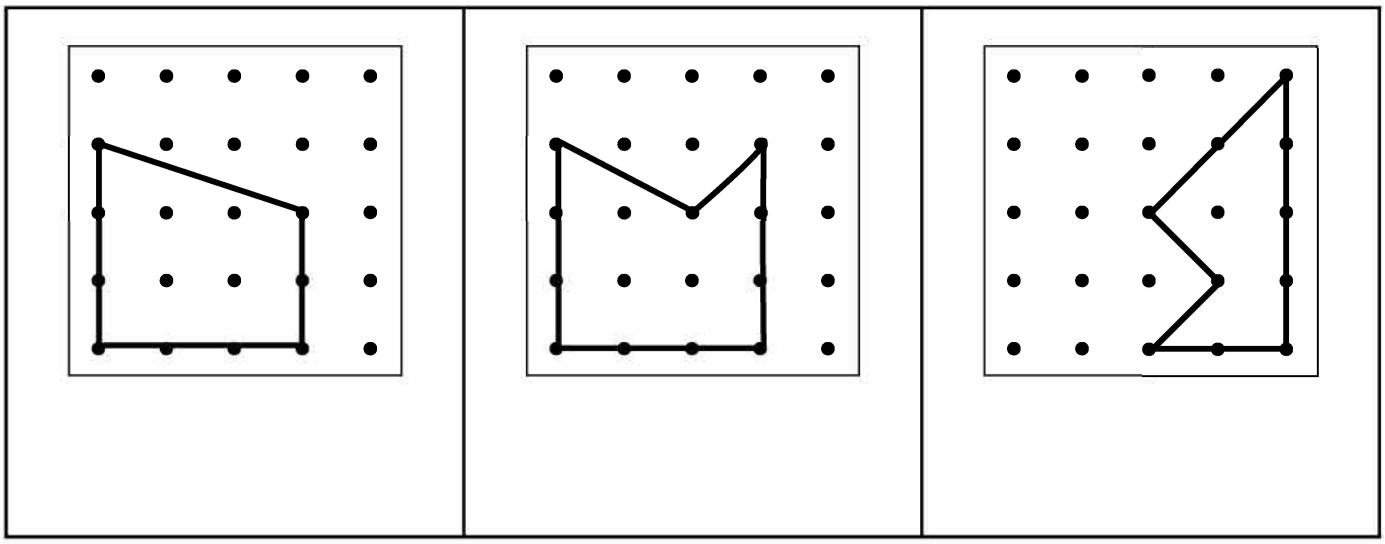
INDEPENDENT WORKSHEET

Geoboard Polygons

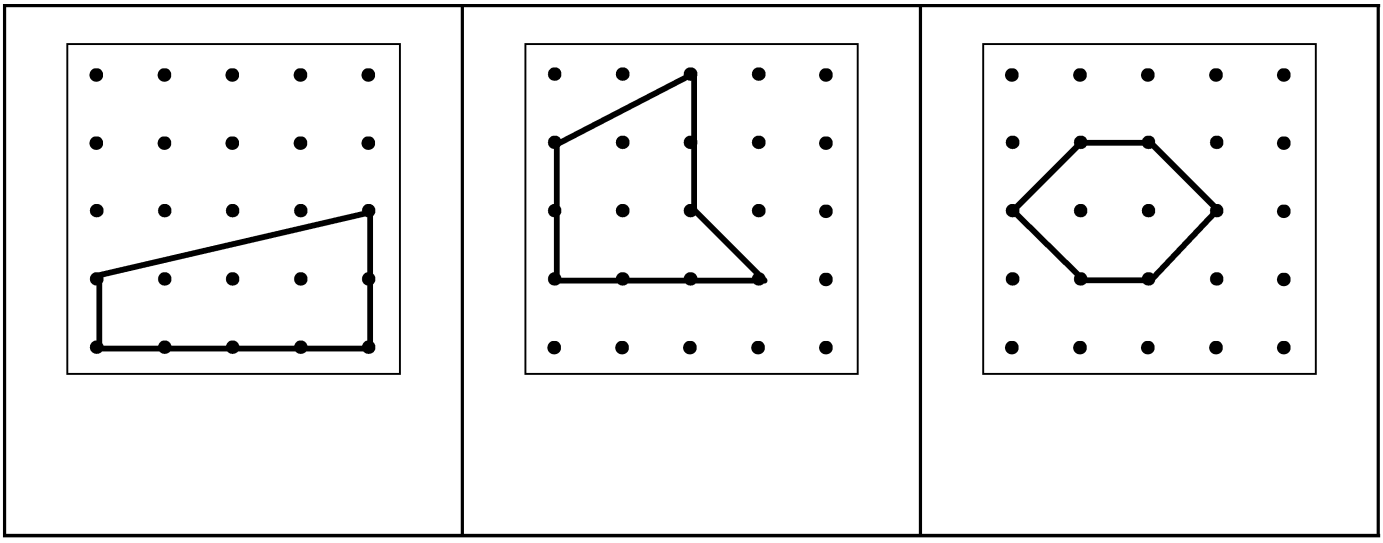
1 Build and record 3 different polygons (not rectangles) that each have an area of 2 square units. Use labeled sketches, numbers, and/or words to prove that the area of each polygon is really 2 square units.



2 Find the area of each of the polygons below in square units. Use labeled sketches, numbers, and/or words to prove each of your answers.



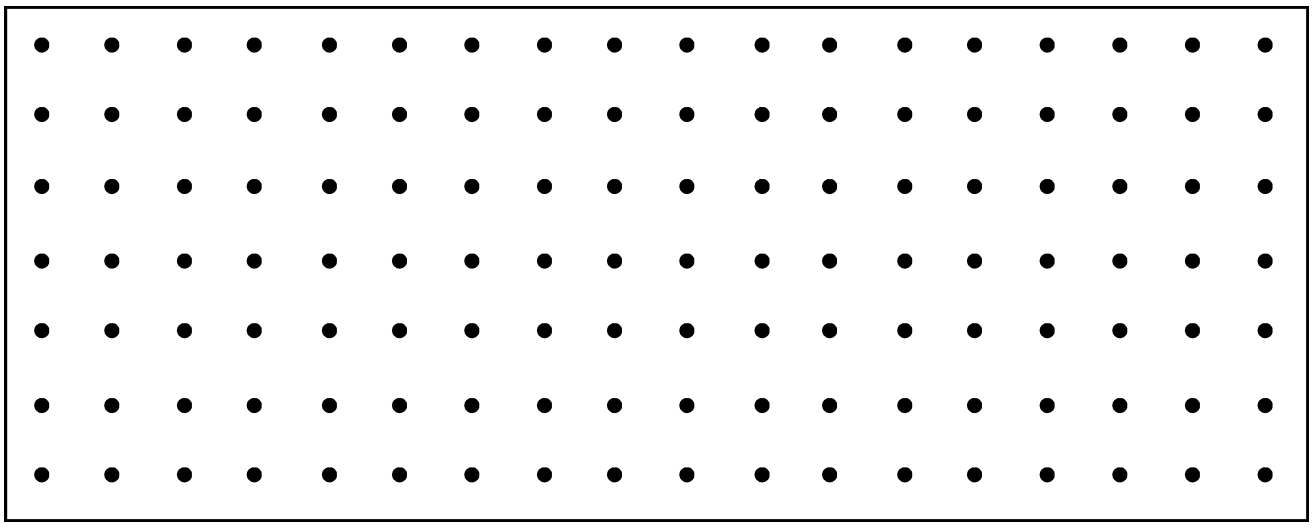
3 Find the area of each of the polygons below in square units. Use labeled sketches, numbers, and/or words to prove each of your answers.



CHALLENGE

4a Here is a giant geoboard. On this geoboard, draw a right triangle, a rectangle, and a square that follow the rules below.

- The rectangle's area must be 3 times as big as the area of the right triangle.
- The square's perimeter must be 2 times as big as the perimeter of the rectangle.



4b Label each of the polygons you drew with its base, height, area, and perimeter.

NAME _____

Set D9 ★ Independent Worksheet 2

INDEPENDENT WORKSHEET

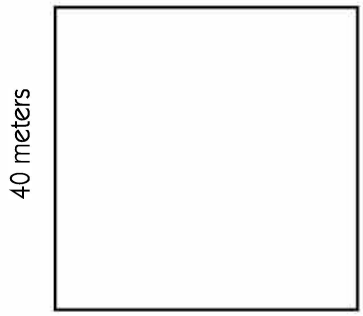
Finding Perimeter & Area of Quadrilaterals

To find the perimeter of any quadrilateral, add the side lengths. For rectangles, you can use the formula 2 times length plus 2 times width, or $2l + 2w$.

The formula for finding the area of all parallelograms, including rectangles is base × height, or bh.

1 Use the formulas above to find the perimeter and area of each figure on this page. Show your work.

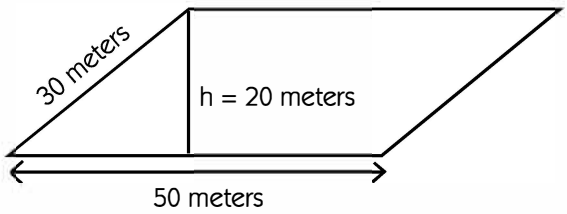
a Square



Perimeter = _____ meters

Area = _____ square meters

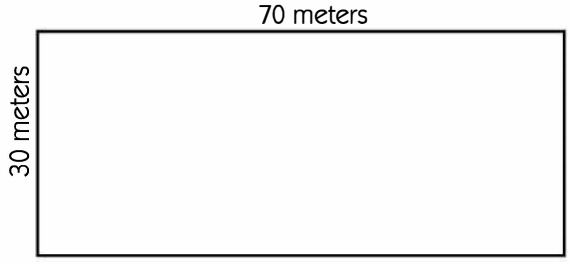
b Parallelogram



Perimeter = _____ meters

Area = _____ square meters

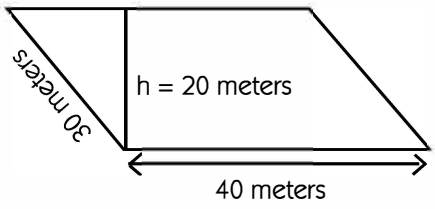
c Rectangle



Perimeter = _____ meters

Area = _____ square meters

d Parallelogram



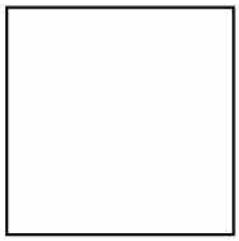
Perimeter = _____ meters

Area = _____ square meters

3 For each quadrilateral below:

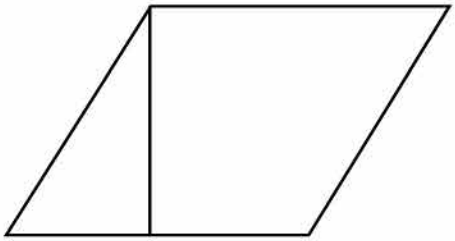
- Measure and label the base and height in centimeters.
- Use the information to find the area of the quadrilateral. Show your work.

a



Area = _____ sq. cm

b

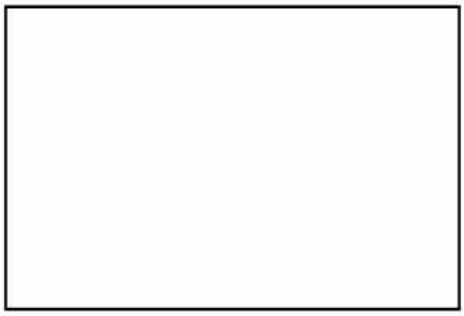


Area = _____ sq. cm

c

Area = _____ sq. cm

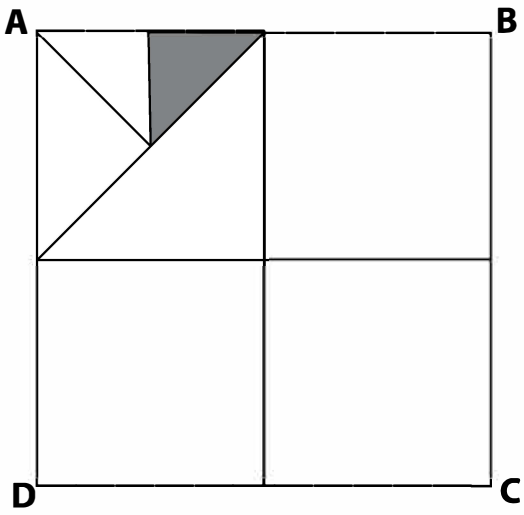
d



Area = _____ sq. cm

CHALLENGE

4 The area of square ABCD is 64 square feet. What is the area of the gray triangle? Use sketches, numbers and/or words to solve the problem. Show all of your work.



NAME _____

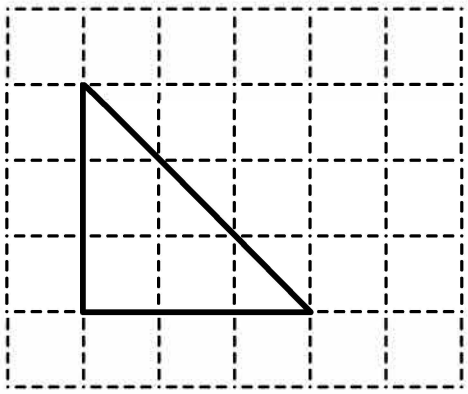
Set D9 ★ Independent Worksheet 3

INDEPENDENT WORKSHEET

Finding the Area of Right Triangles

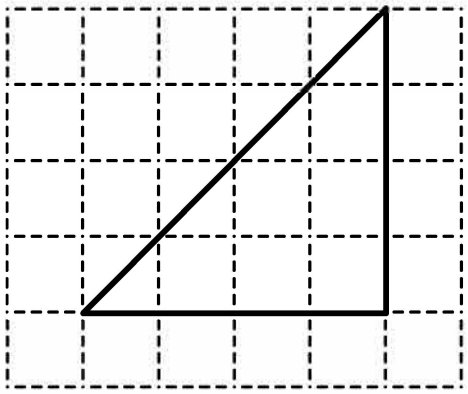
1 The formula for the area of a right triangle is $\frac{1}{2}$ base × height, or $\frac{1}{2}bh$. Use the formula to find the area of each right triangle below. Show your work. Use the grids to check your answers.

a



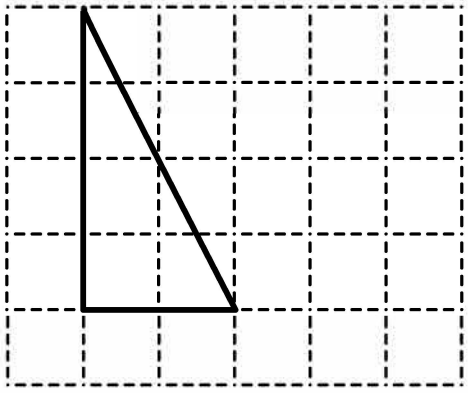
Area = _____ sq. cm

b



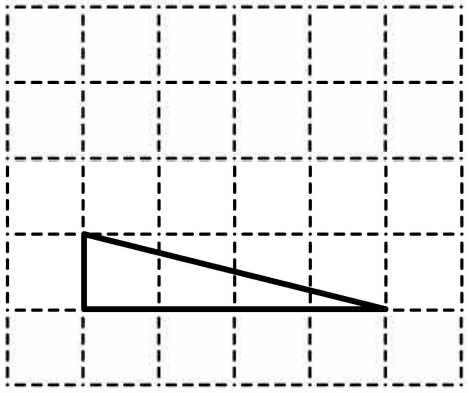
Area = _____ sq. cm

c



Area = _____ sq. cm

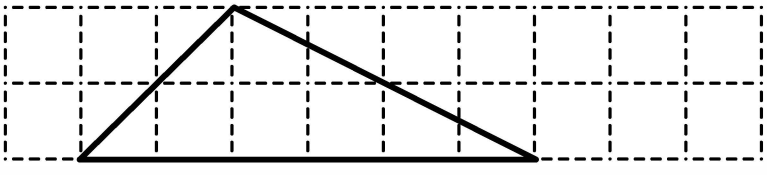
d



Area = _____ sq. cm

CHALLENGE

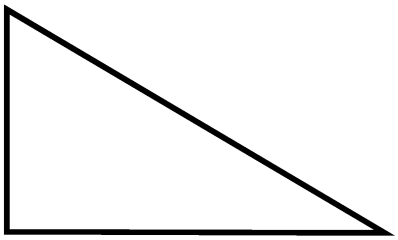
e Hint: Divide the triangle into 2 right triangles. Find the area of each and add them.



3 For each right triangle below:

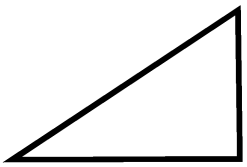
- Measure and label the base and height in centimeters.
- Use the information to find the area of the right triangle. Show your work.

a



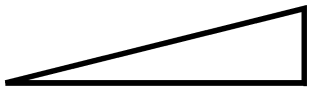
Area = _____

b



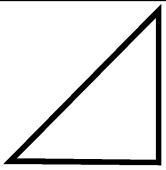
Area = _____

c



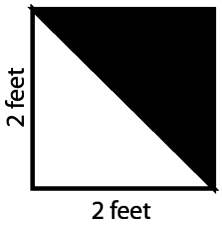
Area = _____

d



Area = _____

4 The drill team wants to make new black and white flags, using the plan below.



a How many square feet of white fabric will it take to make 1 flag? How many square feet of black fabric will it take to make 1 flag? Show your work.

b The team needs to make 20 flags. The black fabric costs 50¢ a square foot. The white fabric is on sale for 45¢ a square foot. How much will they have to pay for all the fabric to make 20 flags? Show your work.

NAME _____

Set D9 ★ Independent Worksheet 4

INDEPENDENT WORKSHEET

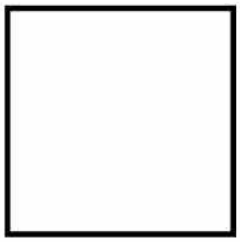
Rectangles, Parallelograms & Right Triangles

The formula for finding the area of all parallelograms, including rectangles, is base × height, or bh.

The formula for finding the area of all triangles is $\frac{1}{2}$ base × height, or $\frac{1}{2}bh$.

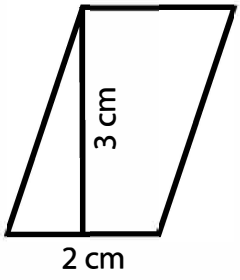
1 Use the formulas above to find the area of each figure on this page. Show your work. Label your answers with the correct units.

a Square



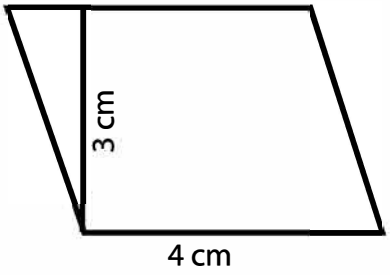
Area = _____

b Parallelogram



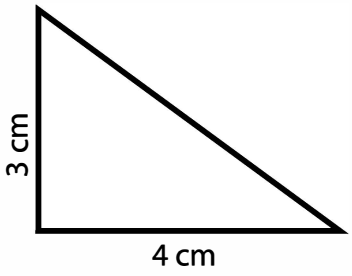
Area = _____

c Parallelogram



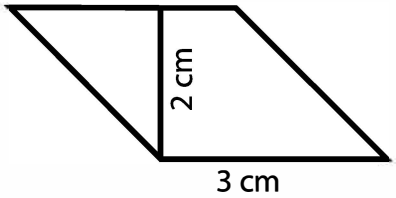
Area = _____

d Right Triangle



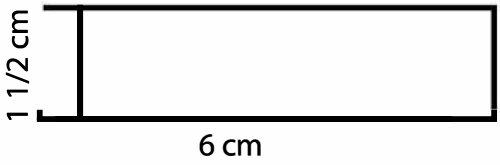
Area = _____

e Parallelogram



Area = _____

f Rectangle



Area = _____

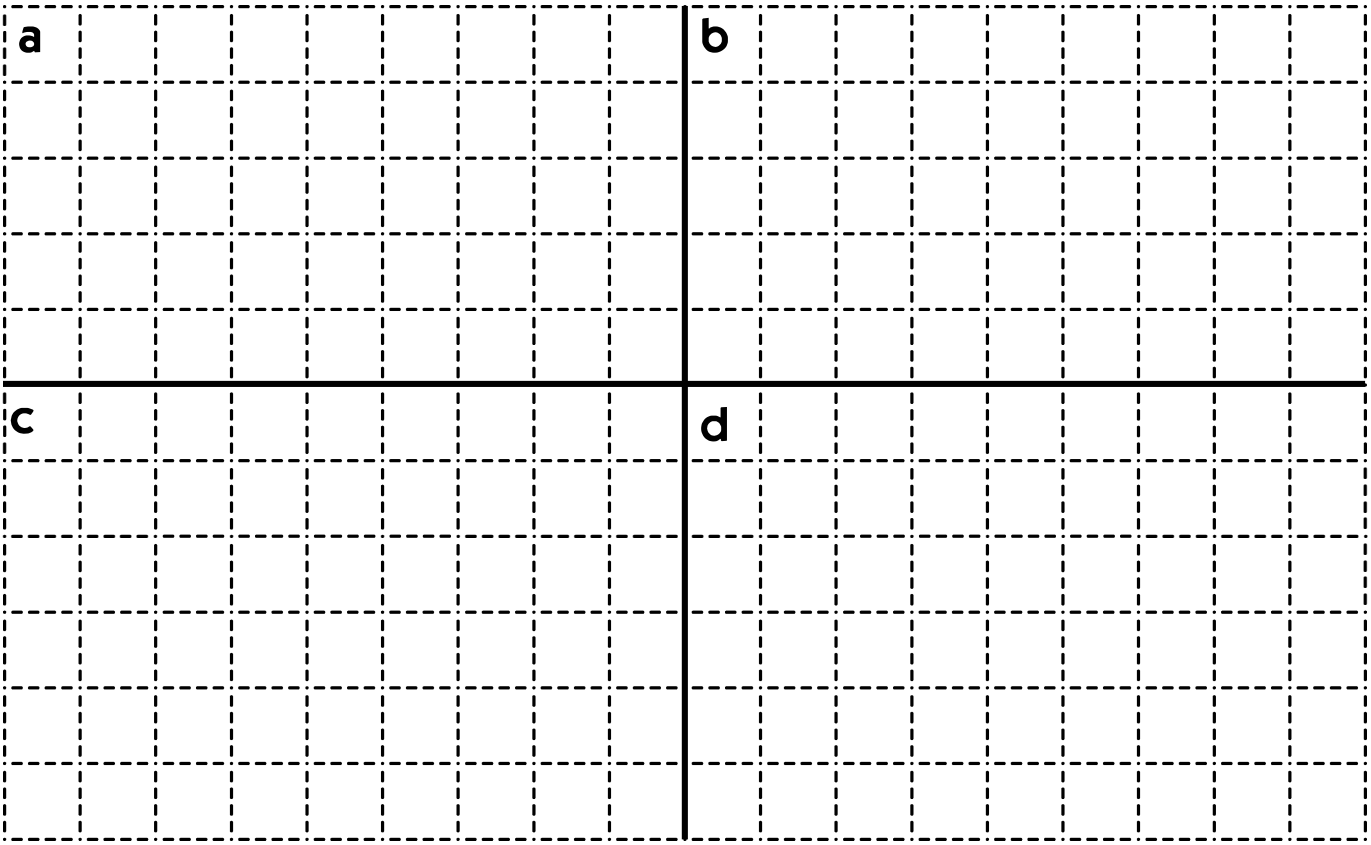
2 On the centimeter grid below, draw the following shapes. Label each shape with its base, height, and area.

a A rectangle with an area of 15 square centimeters.

b A right triangle with an area of 8 square centimeters.

c A parallelogram that is not a rectangle with an area of 10 square centimeters.

d A right triangle with an area of 12 square centimeters.



3 Miss Smith wants to make a paper sailboat to put up on the wall in her kindergarten classroom. How many square inches of butcher paper will she need in each color? Show all of your work. If you need more space, use another piece of paper and attach it to this sheet.