

# Assignment

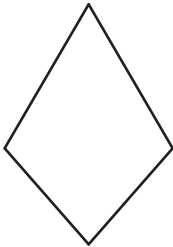
Name \_\_\_\_\_ Date \_\_\_\_\_

1

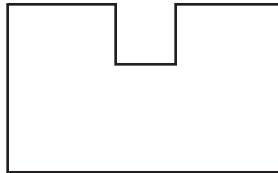
## Building a Deck Introduction to Polygons, Perimeter, and Area

Which of the shapes are polygons? If the shape is a polygon, classify it by the number of sides. If the shape is not a polygon, explain why.

1.



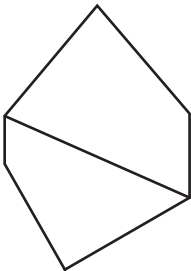
2.



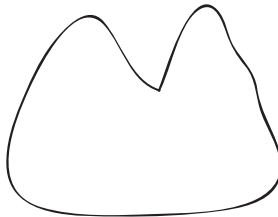
3.



4.



5.

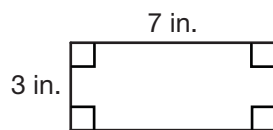


6.

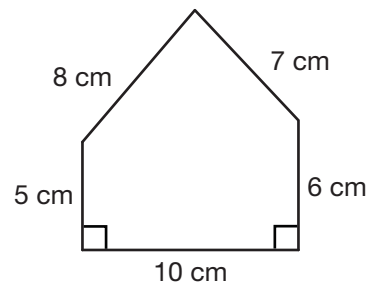


Find the perimeter of each figure.

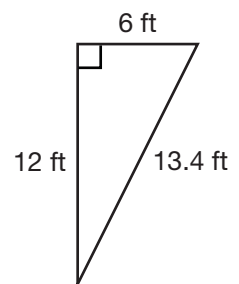
7.



8.



9.



**Area of Your Hand** Find the area of your hand by tracing it on the grid below. How does the area of your hand compare to the area of the hand of the person sitting next to you? Can you predict who in your class has the hand with the least area? Who has the greatest area? Try to use strategies so that you do not have to count each individual square to find the area of your hand. Keep track of the strategies that you used.



# Assignment

Name \_\_\_\_\_ Date \_\_\_\_\_

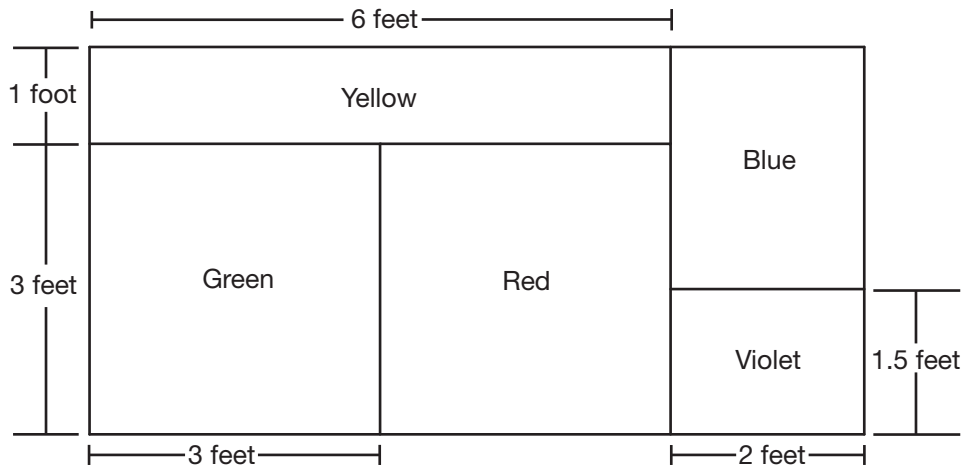
1

## Weaving a Rug

### Area and Perimeter of a Rectangle and Area of a Parallelogram

Read the problem scenario below.

A rug artist is currently weaving a rug to match the pattern below. Find the area of each rectangular region.



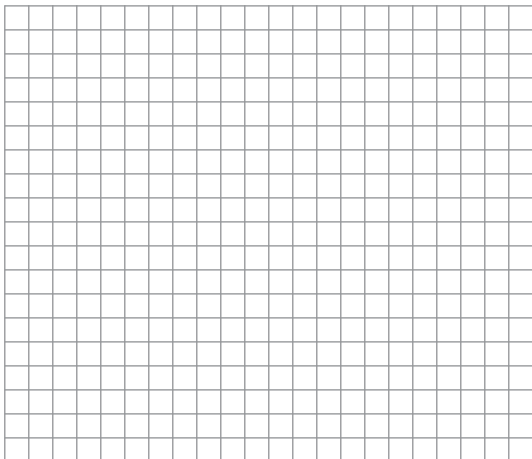
1. Yellow = \_\_\_\_\_
2. Blue = \_\_\_\_\_
3. Green = \_\_\_\_\_
4. Violet = \_\_\_\_\_
5. Red = \_\_\_\_\_
6. What is the area of the entire rectangle? Can you show it two different ways?
7. The artist wants to put a braid trim around the edge of the rectangular rug. How many feet of braid will the artist need to use?

---

**Read the problem scenario below.**

**1**

The artist is charging \$25 per square foot for a more complicated design. A client wants to order a parallelogram shaped rug that will cost \$600. Draw two different designs on the grid below that would meet that requirement. Identify the area, base, and height of each design.



# Assignment

Name \_\_\_\_\_ Date \_\_\_\_\_

1

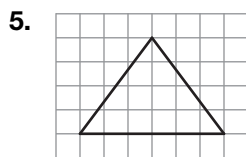
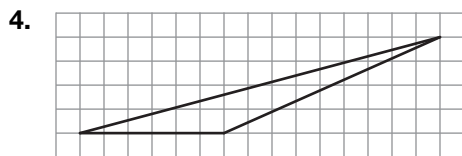
## Sailboat Racing Area of a Triangle

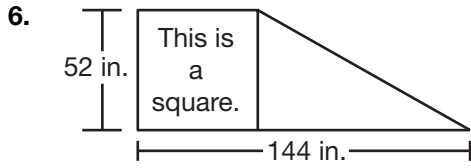
Find the area of each triangle.



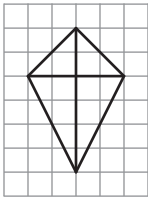
3. If the length of the base of a triangle doubles and the height remains the same, does the area of the triangle double? Explain.

Find the area of each figure.





7. You are making a kite. If the height of the kite is 36 inches and the widest part of the kite is 24 inches, find the amount of nylon fabric you will need.



8. The sail on a boat is triangular and its area is 216 square feet. If the length of the base of the sail is 18 feet, find its height.
9. A triangular window in a beach house is 48 inches in height and contains 1728 square inches of glass. Find the measure of the base of the window.

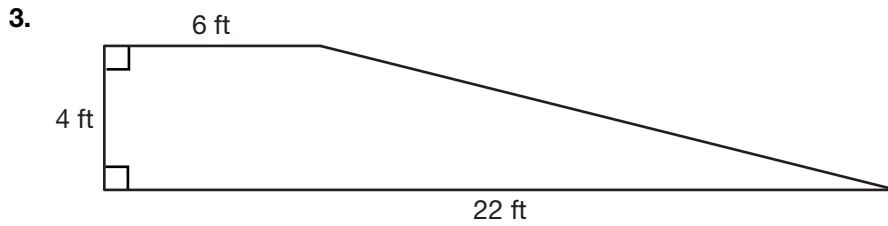
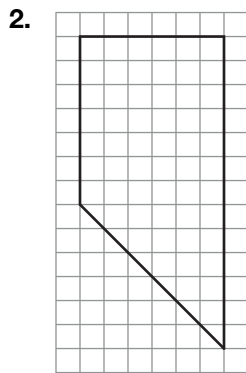
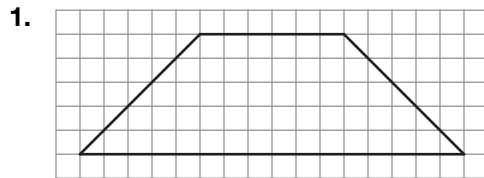
# Assignment

Name \_\_\_\_\_ Date \_\_\_\_\_

1

## The Keystone Effect Area of a Trapezoid

Find the area of each trapezoid.



- 
4. The height of a trapezoid is 7 inches and the bases are 7 inches and 17 inches. Find the area of the trapezoid. Show all your work.
  
  5. Can the bases of a trapezoid ever be the same length? Explain.
  
  6. The bases of a trapezoid are 22 feet and 32 feet and the height is 12 feet. Find the area of the trapezoid. Show all your work.
  
  7. The area of a trapezoid is 209 square yards and the bases are 15 yards and 23 yards. Find the height of the trapezoid. Show all your work.
  
  8. The area of a trapezoid is 150 square meters. The height is 10 meters and one base is two meters longer than the other base. Find the length of each base. Show all your work.

---

Name \_\_\_\_\_ Date \_\_\_\_\_

9. The area of a trapezoid is 252 square feet and the height is 24 feet. Find the length of each base if the first base is twice the length of the second base. Show all your work.





# Assignment

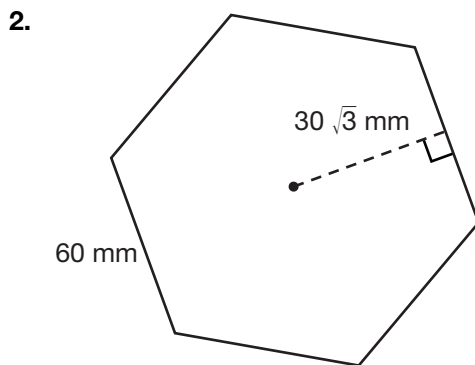
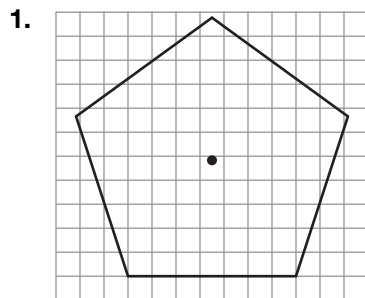
Name \_\_\_\_\_ Date \_\_\_\_\_

1

## Traffic Signs Area of a Regular Polygon

Remember: An *apothem* of a regular polygon is a perpendicular segment from the center to any side of the polygon. If you are finding the area of a regular polygon by dividing it into triangles, the length of an apothem will serve as the height of each triangle.

Find the area of each regular polygon.



3. The apothem of a regular heptagon is 24.9 inches and each side is 24 inches. Find the area of the heptagon. Show all your work.

- 
4. The apothem of a stop sign is 24.1 inches and the length of each side is 20 inches. Find the area of the stop sign. Show all your work.
  
  
  
  
  
  
  
  
  
  
  5. The apothem of a regular decagon is 21.7 meters and the length of each side is 14.1 meters. Find the area of the decagon. Show all your work.
  
  
  
  
  
  
  
  
  
  
  6. The area of a regular nonagon is 378 square yards and the apothem is 10.5 yards. Find the length of each side. Show all your work.
  
  
  
  
  
  
  
  
  
  
  7. A quilt is made by sewing together interlocking regular hexagons. Each hexagon has an apothem of 1.7 inches and a perimeter of 12 inches. About how many regular hexagons will it take to make a quilt that is 6 feet by 8 feet? Show all your work.

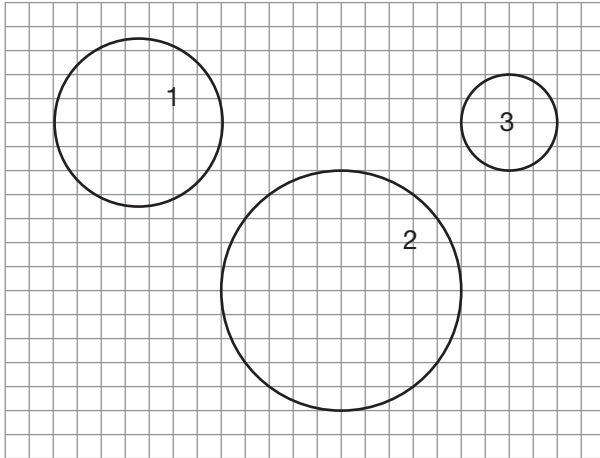
# Assignment

Name \_\_\_\_\_ Date \_\_\_\_\_

1

## Photography Circumference and Area of a Circle

Find the circumference and area each circle on the grid below. Use 3.14 for  $\pi$ . Each square on the grid represents a square that is one centimeter long and one centimeter wide.



1.  $C =$  \_\_\_\_\_  
 $A =$  \_\_\_\_\_

2.  $C =$  \_\_\_\_\_  
 $A =$  \_\_\_\_\_

3.  $C =$  \_\_\_\_\_  
 $A =$  \_\_\_\_\_

Complete the table below. Use 3.14 for  $\pi$ .

Circle number	Radius	Diameter	Circumference	Area
4	1 ft			
5		56 m		
6				200.96 yd <sup>2</sup>



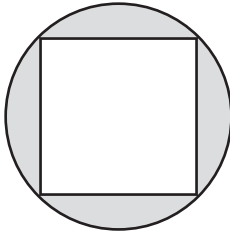
# Assignment

Name \_\_\_\_\_ Date \_\_\_\_\_

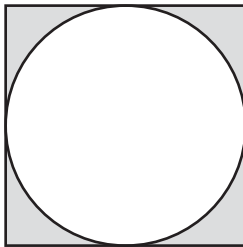
1

## Installing Carpeting and Tile Composite Figures

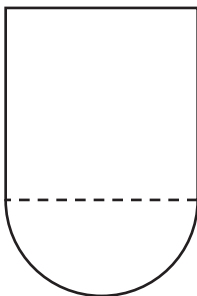
1. In the figure below, the area of the square is 25 square feet. The diagonal of the square is  $\sqrt{50}$  feet. Find the area of the shaded region.



2. In the figure below, the area of the square is 81 square feet. Find the area of the shaded region. Show all your work.



3. The figure below is composed of a semicircle and a square. The area of the square is 196 square feet. Find the perimeter of the figure.



4. In the figure of the room below, each of the longer sides is 6 yards and each of the shorter sides is 3 yards. Floor tile for the room costs \$23 per square yard. How much would it cost to tile the floor?

