

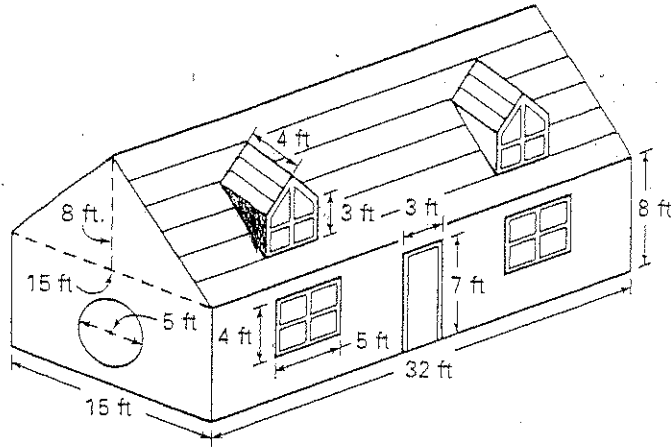
- ▶ READ
- ▶ PLAN
- ▶ SOLVE
- ▶ ANSWER
- ▶ CHECK

# Problem Solving Applications:

## HOW MUCH PAINT?

If you are preparing to paint the outside of a house, the first thing you should pick up is a pencil!

Whichever type of paint you choose, you'll need to know how much of it you'll use. You can estimate the amount of paint by finding the total area to be painted.



First, find the total wall area of the house. Assume that the roof and dormer tops are shingled.

1. **Front wall:** a rectangle  $A = lw$  Area:  ft<sup>2</sup>
2. **Side wall:** a rectangle and a triangle  $A = lw + \frac{1}{2}bh$  Area:  ft<sup>2</sup>
3. **Dormers:** 4 congruent triangles  $A = 4 \times \frac{1}{2}bh$  Area:  ft<sup>2</sup>
4. Assume that the front and back walls of the house are identical and that the side walls are identical. There are no dormers in the back. What is the total wall area?

Next, you will need to subtract the areas of the windows and doors. Find their total area.

5. **Door:** a rectangle  $A = lw$  Area:  ft<sup>2</sup>
6. **Front windows:** 2 congruent rectangles  $A = 2 \times lw$  Area:  ft<sup>2</sup>
7. **Side window:** a circle  $A = \pi r^2$  Area:  ft<sup>2</sup>
8. The back door and back windows are the same as those in the front. Both sides have identical circular windows. What is the total area to be subtracted?
9. What is the total area that will be painted?

A gallon of high-quality paint covers about 400 ft<sup>2</sup>. A gallon of less expensive paint covers about 250 ft<sup>2</sup> and may require two coats.

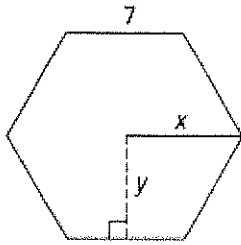
10. How many gallons of paint will the house require if you use one coat of high-quality paint? How many gallons if you use two coats of less expensive paint?

**Practice 10-3**

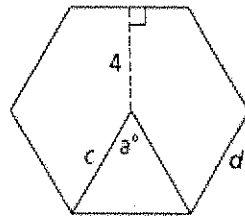
**Areas of Regular Polygons**

Find the values of the variables for each regular hexagon. Leave your answers in simplest radical form.

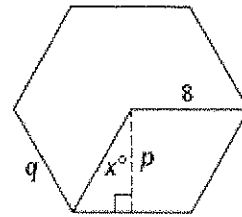
1.



2.

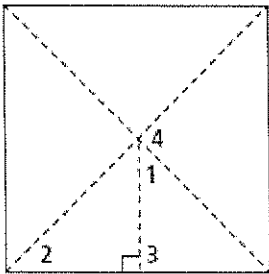


3.

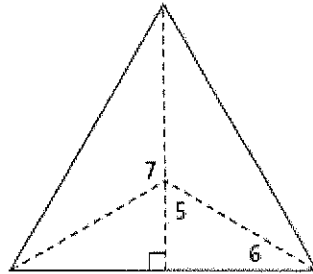


Each regular polygon has radii and an apothem as shown. Find the measure of each numbered angle.

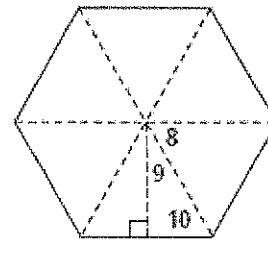
4.



5.

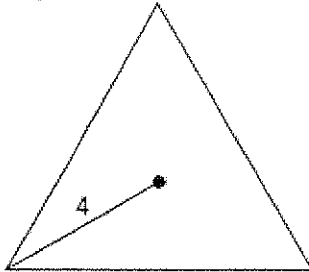


6.

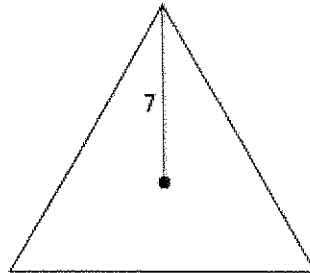


Find the area of each equilateral triangle, given the radius. Leave your answers in simplest radical form.

7.



8.



9.

