Elementary Algebra Skill

Setting Up and Solving Geometry Problems

1. A 30-inch rod is cut into 2 pieces in such a way that the longer piece is 5 times the shorter piece. Find the length of each piece.

2. Find the length of a side of a square if its area is 400 square inches.

3. The length of a rectangle is 2 more than three times its width. Find the dimensions of the rectangle if its perimeter is 64 inches.

4. The area of a right triangle is 6 square feet. The measures of the height and the base of the triangle are given by two consecutive integers. Find the height and base of the right triangle.

5. The width of a rectangle is 2 cm less than the length. Find the dimensions of the rectangle if its area is 48 square cm.

6. What is the radius of a circle whose circumference is 42π inches?

7. Find the diameter of a circle whose area is 16π square feet.

8. In a triangle, the largest angle is 15° less than four times the smallest angle and the other angle is 15° more than the smallest angle. Find the measures of the three angles.

9. Find the length of the hypotenuse of a right triangle if the shorter leg is 5 ft and the longer leg is 1 foot shorter than the hypotenuse.

10. The volume of a rectangular box is 30 cu inches. Find the length and width of the box if the height is 5 inches and the length and width are given by two consecutive integers.

Answers to Setting Up and Solving Geometry Problems

1. 5 in and 25 in
2. 20 in
3. 7.5 in and 28.5 in
4. 3 ft and 4 ft
5. 6 cm by 8 cm
6. 21 in
7. 8 ft
8. 30°, 45°, and 105°
9. 13 ft
10. 2 in and 3 in