

**(Section 5-3)**

Name: \_\_\_\_\_

Solve the following **QUADRATIC EQUATIONS** using the **SQUARE ROOT METHOD**:

1.  $w^2 - 16 = 0$

2.  $2y^2 - 48 = 0$

3.  $4m^2 = -196$

4.  $(b-2)^2 = 36$

5.  $3(x+1)^2 + 2 = 14$

6.  $4\left(\frac{1}{2}a+1\right)^2 - 5 = 31$

Solve the following **QUADRATIC EQUATIONS** by **FACTORING & ZERO PRODUCT PROPERTY**:

1.  $w^2 - 2w = -24$

2.  $t^2 = 8t + 20$

3.  $r^2 + 5 = 6r$

4.  $x^2 + 2x - 20 = 7x + 4$

5.  $(x+2)(x-4) = 4 + 2x$

6.  $2x^2 - 5 = 3x^2 + 11 - 10x$

(Continued) Solve the following **QUADRATIC EQUATIONS** by **FACTORING & ZERO PRODUCT PROPERTY**:

7.  $2x^2 + 7x - 15 = 0$

8.  $4p^2 - 10 = 3p$

9.  $3x^2 + 2x - 12 = 3x^2 + 6x$

10.  $x^3 - 12x^2 + 32x = 0$

11.  $x^2 - 4 = 0$

12.  $2a^2 + 17a + 8 = 0$

Solve the applications that of **QUADRATIC EQUATIONS**:

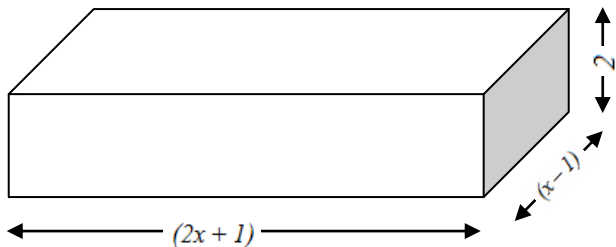
1. The length of a rectangle is 1 cm more than twice its width. If the area of the rectangle is  $21\text{cm}^2$  then what are the dimensions?



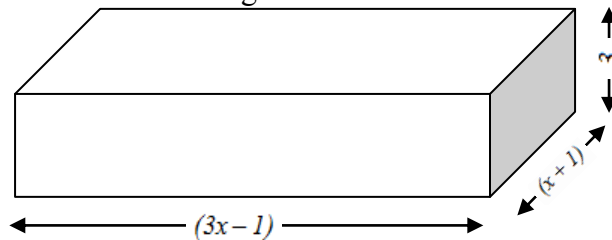
2. The length of a rectangle is 3 cm less than twice its width. If the area of the rectangle is  $20\text{cm}^2$  then what are the dimensions?



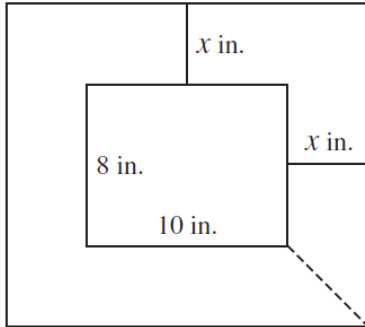
3. The volume of the prism is 28 cubic inches. What is the length of each side?



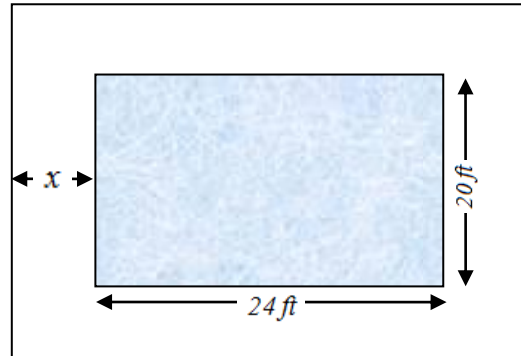
4. The volume of the prism is 45 cubic inches. What is the length of each side?



5. A picture frame is shown at the right. If the entire area of the frame and the picture totals 120 square inches find the width of the frame.



6. A below ground swimming pool is to be constructed in the park. The pool is in the shape of a rectangle with the dimensions of 20' by 24'. A uniform width sidewalk is to be made around the pool. If the contractor says that he has enough concrete to create 300 ft<sup>2</sup> of sidewalk. What is the maximum width of the sidewalk around the pool?



7. The product of two consecutive positive integers is 132. Write an equation to model the situation and find the two integers.

8. The perimeter of a rectangle is 42 cm and the area is 80 cm<sup>2</sup>. Write an equation to model the situation and find the dimensions of the rectangle.

9.

9. A park is putting in a sidewalk of uniform width to go around two sides of a rectangular garden that is 10 feet by 30 feet. The contractor has enough concrete for 176 ft<sup>2</sup>. What is the maximum width of such a sidewalk?

