

Practice 10-6**Using the Quadratic Formula**

1. A rectangular painting has dimensions x and $x + 10$. The painting is in a frame 2 in. wide. The total area of the picture and the frame is 900 in.^2 . What are the dimensions of the painting?

2. A ball is thrown upward from a height of 15 ft with an initial upward velocity of 5 ft/s. Use the formula $h = -16t^2 + vt + s$ to find how long it will take for the ball to hit the ground.

3. The Garys have a triangular pennant of area 420 in.^2 flying from the flagpole in their yard. The height of the triangle is 10 in. less than 5 times the base of the triangle. What are the dimensions of the pennant?

Use the quadratic formula to solve each equation. If the equation has no solutions, write *no solution*. If necessary, round to the nearest hundredth. Show your work.

4. $a^2 - 3a - 154 = 0$

5. $4p^2 - 12p - 91 = 0$

6. $5m^2 + 9m = 126$

$$7. r^2 - 33r + 70 = 0$$

$$8. y^2 + 6y - 247 = 0$$

$$9. x^2 + 12x - 40 = 0$$

$$10. 4n^2 - 81 = 0$$

$$11. x^2 + 13x + 30 = 0$$

$$12. d^2 - a = 132$$

$$13. m^2 - 40m + 100 = 0$$

$$14. 8x^2 + 25x + 19 = 0$$

$$15. 36w^2 - 289 = 0$$

$$16. 4d^2 + 29d - 60 = 0$$

$$17. 4z^2 + 43z + 108 = 0$$

$$18. 3x^2 - 19x + 40 = 0$$