Integrated Math 2 Module 9 part 1 Review Name:_____

Simplify each expression.

1. $\sqrt{121}$
2. $-\sqrt{81}$
3. $\sqrt{120}$
4. $\sqrt{396}$

.

Factor each trinomial.

5. $x^2 - 12x + 36$
6. $4x^2 + 20x + 25$

Solve for x by taking the square root. Your answer should be in simplified radical form.

7. $x^2 - 5 = 15$
8. $(x - 3)^2 = 9$
9. $2(x + 1)^2 = 16$
10. $4(x - 9)^2 + 1 = 17$

Solve for x by completing the square.

11. $x^2 - 8x - 20 = 0$
12. $x^2 + 10x + 3 = 0$

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Solve for x by completing the square.

13. $2x^2 - 4x = 8$

14. $3x^2 - 9x = 3$

Use the projectile motion formula to answer the following question.

$$h = -16t^2 + vt + s$$

15. For a scene in a movie, a bag of cash is dropped from the top of a 900 foot building. How long will it take the bag to reach the ground? Round to the nearest tenth of a second.

16. A rectangular patio has an area of 91 square feet. The length is 6 feet greater than the width. Find the dimensions of the patio.
    a. Find the width and the length in terms of w.
    b. Write an equation for the total area.
    c. Find the dimensions.

Answers

1. 11
2. -9
3. $2\sqrt{30}$
4. $6\sqrt{11}$
5. $(x-6)^2$
6. $(2x+5)^2$
7. $x = \pm 2\sqrt{5}$
8. $x = 0 \text{ or } 6$
9. $x = -1 \pm 2\sqrt{2}$
10. $x = 7 \text{ or } 11$
11. $x = -2 \text{ or } 10$
12. $x = -5 \pm \sqrt{22}$
13. $x = 1 \pm \sqrt{5}$
14. $x = \frac{3}{2} \pm \frac{\sqrt{13}}{2}$
15. 7.5 seconds
16.
    a. Width = w
       Length = $w + 6$
    b. $w(w+6) = 91$
       $w^2 + 6w = 91$
    c. Width = 7 feet
       Length = 13 feet