

**4.5 Solve Quadratic Equations by Finding Square Roots**

(1-8) Simplify the expression. Blue calculators only!

1.)  $\sqrt{54}$

2.)  $\sqrt{8} \cdot \sqrt{28}$

3.)  $\sqrt{\frac{8}{5}}$

4.)  $\frac{3 + \sqrt{2}}{4 - \sqrt{6}}$

5.)  $5\sqrt{24} \cdot 2\sqrt{28}$

6.)  $\frac{-4}{\sqrt{15}}$

7.)  $\frac{-6}{5 - \sqrt{11}}$

8.)  $\sqrt{153}$

(9-13) Solve the equation. Be sure to give your answer using simplified radicals.

9.)  $3x^2 = 108$

10.)  $7y^2 - 10 = 2y^2$

11.)  $3(p + 1)^2 = 81$

12.)  $(x + 2)^2 - 12 = 36$

13.)  $2(m - 7)^2 - 3 = 13$

#### 4.6 Perform Operations with Complex Numbers

(14-19) Write the expression as a complex number in standard form.

14.)  $-9i(2 - i)$

15.)  $(5 + i)(4 - 2i)$

16.)  $(8 - 6i)(7 + 4i)$

17.)  $(8 - 6i) - (9 - 5i)$

18.)  $(2 - 3i) - (6 - 5i)$

19.)  $4i(-3 + 6i)$

#### 4.8 Use the Quadratic Formula and the Discriminant

- Determine the discriminant.
- Determine the number and type of solutions of the equation.
- Use the quadratic formula to solve the equation.

20.)  $x^2 + 4x - 3 = 0$

21.)  $9x^2 = -6x - 1$

22.)  $6x^2 - 8x = -3$

23.) A person spikes a volleyball over a net when the ball is 9 feet above the ground. The volley ball has an initial vertical velocity of -40 feet per second. The volleyball is allowed to fall to the ground. How long is the ball in the air after it is spiked?

25) How long will it take an object dropped from a 410 foot building to land on the ground?

26) An object is launched upward with an initial velocity of 64 feet per second from a platform 80 feet high.  
a. Write a height model for the object.

b. How many seconds until the maximum height is reached?

c. What will be the maximum height?

d. How many seconds until the object hits the ground?