Quadratic Equations Chapter 9 Practice Test

Solve the following quadratic equations using any method you choose.

1) \(7x^2 + 3 = 66\)

2) \(10x^2 - 11x + 3 = 0\)

Solve the following quadratics equation by graphing. Find the vertex by hand, show your table, and label your graph.

3) \(x^2 + 11x + 10 = 0\)

4) \(y = -3x^2 + 6x - 4\)

5) How long will it take a rock dropped from 900 feet to reach the ground?

6) Graph the following quadratic inequality. Compute your vertex by hand, show your table, and label your graph correctly.

\[ y > 2x^2 - 4x - 3 \]

Solve the following quadratic equations by find the square roots.

7) \(7x^2 + 30 = 9\)

8) \(3a^2 + 10 = 20 - 2a^2\)
Use the quadratic formula to find all real roots. If rounding is necessary, round to the nearest hundredth.

9) \(2x^2 = 4x + 30\)  \hspace{1cm} 10) \(-3x^2 - 2x + 1 = 0\)

Find the value of the discriminant and use it to determine the number of solutions for the following quadratic equations.

11) \(4x^2 = 12x - 9\)  \hspace{1cm} 12) \(2x^2 - 3x + 5 = 0\)

13) You were outside flying your kite and it got caught up in a tree 32 feet above the ground. You really want to get it down so you take your football and throw it at the kite hoping to knock it down. If you throw the football at 27 feet per second and your release is 5 feet off the ground how long will it take the football to hit the ground if you miss the kite?

Solve the following quadratic equations by completing the square.

14) \(2x^2 - x - 2 = 0\)  \hspace{1cm} 15) \(x^2 + 10x - 24 = 0\)

Solve the following quadratic equations by factoring.

16) \(4x^2 - 25 = 0\)  \hspace{1cm} 17) \(6x^2 + 19x = 7\)