NAME _____ DATE _____

# Module Test B

**Module 13**

**Fill in the blanks with the terms or numbers to best complete each statement.**

**1.** _____ to equations are also called roots.

**2.** The _____ Property states that if $ab = 0$, then $a = 0$ or $b = 0$.

**3.** A perfect square trinomial is the result of squaring a _____.

**4.** Complete the square. $x^2 - 20x +$ _____

**5.** When $2x^2 - x - 2 = -5$ is written in standard form, $a =$ _____,

$b =$ _____, and $c =$ _____.

**Choose the correct response for each of the following:**

**6.** Which of the following is a quadratic equation?

**a.** $7p(p - 1) = 15$ **b.** $t^2(t^2 - 4) = -8$

**c.** $4^2y - 3y + 9 = 0$ **d.** $c^2 - 2c + 5 = c(c + 1)$

**7.** Solve: $-2x^2 = 98$.

**a.** $\varnothing$ **b.** $\{-7\}$ **c.** $\{7\}$ **d.** $\{7, -7\}$

**8.** Solve: $x^2 - 7x - 18 = 0$.

**a.** $\{-2\}$ **b.** $\{9\}$ **c.** $\{-2, 9\}$ **d.** $\{2, -9\}$

**9.** Which is the discriminant of $x^2 + 2x + 1 = 0$?

**a.** 0 **b.** 2 **c.** 4 **d.** 8

**10.** The height, in feet, of a ball tossed in the air is given by $h = -16t^2 + 10t$, where $t$ is the time in seconds. What is the initial height of the ball?

**a.** 16 ft **b.** 15 ft **c.** 29 ft **d.** 30 ft

**Are the following statements true or false?**

**11.** $(k + 4)^2 = 16$ is a quadratic equation. _____

**12.** The solution set of $(x - 2)^2 = 25$ is $\{7, -3\}$. _____

**13.** $x^2 - 25x + 50$ is a perfect square trinomial. _____

**14.** $x^2 - 4x + 4$ factors into $(x + 2)^2$. _____

**Solve.**

**15.** $-5(x - 1)^2 - 10 = -330$ _____

**16.** $x^2 + x = 20$ _____

**17.** $x^2 - 9x + 1 = 15$ _____

**18.** $3b^2 - 6 = -5b$ _____

**19.** The area of a rectangular floor is 96 square feet. The length is eight feet less than four times the width. Find the dimensions of the floor.

_____

**20.** A flare is fired into the air from an aircraft that is 150 feet above the ground. The height of the flare is modeled by the equation $h = -16t^2 + 80t + 150$, where $h$ is the flare's height in feet above the ground and $t$ is the time in seconds since it was fired. At what time will the flare be 20 feet above the ground? Round the answer to the nearest hundredth of a second.

_____

**Answer the following questions with complete sentences.**

**21.** Explain how to solve a quadratic equation by completing the square.

_____

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**22.** Give an example of each of the following: a quadratic equation with no real number roots, a quadratic equation with one real number root, and a quadratic equation with two real number roots.

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