NAME _____   **DATE** _____

Module Test $\boxed{A}$ **Module 18**

Solve.

1. $\sqrt{t} = 4$ _____

2. $-\sqrt{h} = 6$ _____

3. $\sqrt{x} = \frac{2}{3}$ _____

4. $-\sqrt{x} = -0.5$ _____

5. $\sqrt[4]{x} = -2$ _____

6. $\sqrt[3]{x} = -2$ _____

7. $\sqrt[3]{b} = 3$ _____

8. $\sqrt[4]{t} = 1$ _____

9. $\sqrt{r} - 9 = 11$ _____

10. $\frac{\sqrt{j}}{-5} = -2$ _____

11. $\sqrt{5r} = 4$ _____

12. $\sqrt{p - 9} = -4$ _____

13. $\sqrt{5x + 6} = 1$ _____

14. $\sqrt[3]{8t} = 4$ _____

15. $\sqrt[3]{f} - 1 = \frac{1}{2}$ _____

16. $\frac{4\sqrt{m + 1}}{5} = 8$ _____

Choose the letter of the correct answer.

17. A police officer used the formula $s = 5.5\sqrt{0.75m}$ to determine a car was going 79 mph when it went into a skid. What was the approximate length of the skid marks? (In the formula, s is the car's speed in mph, and m is the length of the skid mark in feet).

    a. about 42 feet   **b.** about 155 feet

    c. about 275 feet   **d.** about 367 feet

18. A wire runs from the top of a 24-foot telephone pole to a point on the ground seven feet from the base of the pole. How long is the wire? (Use the formula $c = \sqrt{a^2 + b^2}$, where c is the length of the hypotenuse of a right triangle, and a and b are the lengths of its legs.)

    a. 17 feet   **b.** 23 feet

    c. 25 feet   **d.** 31 feet

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Complete each statement.

19. The distance between the points (x_1, y_1) and (x_2, y_2) can be found using the formula

   $d =$ _____.

20. The midpoint of the segment with endpoints at (x_1, y_1) and (x_2, y_2) can be found using

   the formula $m =$ _____.

21. An _____ solution is one that is produced using valid

   operations on a radical equation, but that is not a solution to the original equation.

Solve each problem.

22. A jet is located 16 miles east and four miles north of an airport runway. At the same
   time, an airliner is located one mile west and two miles north of the same runway.
   What is the distance between the two aircraft?

   _____

23. A fast food chain is opening a new franchise at a location halfway between two
   existing locations. Currently, there is a restaurant located three miles west and nine
   miles north of company headquarters, and another located three miles east and three
   miles south of company headquarters. Relative to the location of company
   headquarters, what will be the location of the new restaurant?

   _____

24. Circle A has a diameter with endpoints at $(-3, 2)$ and $(5, 0)$. Circle B has a diameter
   with endpoints at $(-6, -2)$ and $(4, 4)$. What is the distance between the center of
   Circle A and the center of Circle B?

   a. Explain the steps needed to solve the problem.

   _____

   _____

   b. Solve the problem.

25. Give an example of a radical equation that has no solution.

   _____