Chapter 10 Test, Form 1

SCORE _____

Write the letter for the correct answer in the blank at the right of each question.

1. How does the graph of $y = \sqrt{x} + 2$ compare to the parent graph?
A translated up 2   **C** translated left 2
B translated down 2   **D** translated right 2

1. _____**A**_____

2. Which expression has a domain of $\{x \mid x \geq -1\}$?
F $y = \sqrt{x+1}$ **G** $y = \sqrt{x-1}$ **H** $y = \sqrt{x} + 1$ **J** $y = \sqrt{x} - 1$

2. _____**F**_____

For Questions 3–7, simplify each expression.

3. $\sqrt{90}$
A $9\sqrt{10}$ **B** $10\sqrt{9}$ **C** $3\sqrt{10}$ **D** $\sqrt{30}$

3. _____**C**_____

4. $\frac{3}{5 - \sqrt{2}}$

F $\frac{15 + 3\sqrt{2}}{23}$ **G** $\frac{15 - 3\sqrt{2}}{23}$ **H** $15 + 3\sqrt{2}$ **J** $\frac{15 + 3\sqrt{2}}{3}$

4. _____**F**_____

5. $6\sqrt{5} - 2\sqrt{5}$
A 4 **B** -12 **C** $-12\sqrt{5}$ **D** $4\sqrt{5}$

5. _____**D**_____

6. $3\sqrt{12} + \sqrt{27} - 2\sqrt{20}$
F $14\sqrt{3} - 4\sqrt{5}$ **G** $3\sqrt{3} - \sqrt{2}$ **H** $9\sqrt{3} - 4\sqrt{5}$ **J** $21\sqrt{3} - 8\sqrt{5}$

6. _____**H**_____

7. $\sqrt{2} \left(\sqrt{6} + 3\sqrt{2} \right)$
A $3\sqrt{2} + 6$ **B** $6\sqrt{2}$ **C** $2\sqrt{3} + 3\sqrt{2}$ **D** $2\sqrt{3} + 6$

7. _____**D**_____

8. Solve $\sqrt{2x - 5} = 3$.
F 4 **G** 7 **H** -8 **J** $\frac{11}{2}$

8. _____**G**_____

9. Solve $\sqrt{2x + 8} = x$.
A $-2, 4$ **B** 4 **C** -2 **D** $2, 4$

9. _____**B**_____

10. Find the length of the hypotenuse of a right triangle if $a = 3$ and $b = 4$.
F 5 **G** $\sqrt{7}$ **H** 25 **J** 7

10. _____**F**_____

11. Determine which side measures form a Pythagorean triple.
A 4, 5, 6   **B** 3, 4, 5   **C** 5, 11, 12   **D** 4, 8, 12

11. _____**B**_____

12. Find $m\angle A$ to the nearest tenth if $\cos A = \frac{3}{5}$.
F $0.9°$ **G** $31.0°$ **H** $36.9°$ **J** $53.1°$
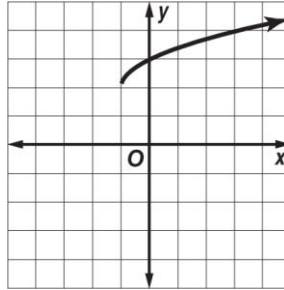
12. _____**J**_____

Chapter 10 Test, Form 1 *(continued)*

13. Determine which set of measures can be the lengths of the sides of a right triangle.

    A 2, 3, 5   **B** 4, 6, 7   **C** 10, 12, 13   **D** 1, $\sqrt{3}$, 2

13. _____**D**_____

14. What is the equation of the graph?

    F $y = \sqrt{x + 2} + 1$ **H** $y = \sqrt{x + 1} + 2$

    G $y = \sqrt{x - 2} + 1$ **J** $y = \sqrt{x - 1} + 2$

14. _____**H**_____

15. Simplify $2\sqrt{x} \cdot 5\sqrt{x} \cdot 3\sqrt{x}$.

    A $30\sqrt{x}$ **B** $30x^2\sqrt{x}$ **C** $30x\sqrt{x}$ **D** $30x^3$

15. _____**C**_____

16. What is the length of a diagonal of a rectangle with a length of 8 meters and a width of 6 meters?

    F 10 m   **G** 14 m   **H** 48 m   **J** 100 m

16. _____**F**_____

17. Determine which side measures form a right triangle.

    A 10, 24, 28   **B** 13, 17, 21   **C** $\sqrt{3}, \sqrt{4}, \sqrt{5}$ **D** 5, 12, 13

17. _____**D**_____

18. SAILING A 12-foot cable attached to the top of the mast of a sailboat is fastened to a point on the deck 4 feet from the base of the mast. What is the height of the mast?

    F 9.56 ft   **G** 22 ft   **H** 11.31 ft   **J** 128 ft

18. _____**H**_____

For Questions 19 and 20, the leg adjacent to acute ∠A in a right triangle measures 8 units, and the hypotenuse measures 13 units.

19. What is cos A?

    A $\frac{8}{13}$ **B** $\frac{13}{8}$ **C** 38°   **D** 52°

19. _____**A**_____

20. What is $m\angle A$?

    F 1°   **G** 32°   **H** 38°   **J** 52°

20. _____**J**_____

Bonus Simplify $\sqrt{4x^2 + 4x + 1}$.

B. _____**|2x + 1|**_____