8 Chapter 8 Test, Form 2A

SCORE _____

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

1. Find the geometric mean between 7 and 12.
- **A** 5
- **B** 9.5
- **C** $\sqrt{19}$
- **D** $2\sqrt{21}$

1. _____

2. In $\triangle PQR$, $RS = 4$ and $QS = 6$. Find PS.
- **F** 2
- **G** 5
- **H** $\sqrt{10}$
- **J** $2\sqrt{6}$

2. _____

3. Find x.
- **A** $3\sqrt{2}$
- **B** $\sqrt{14}$
- **C** 4.5
- **D** 3

3. _____
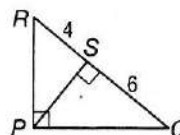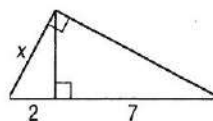
4. Find y.
- **F** 12
- **G** 11
- **H** 9
- **J** 2

4. _____
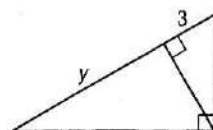
5. Find the length of the hypotenuse of a right triangle with legs that measure 5 and 7.
- **A** 12
- **B** $\sqrt{24}$
- **C** $\sqrt{35}$
- **D** $\sqrt{74}$

5. _____

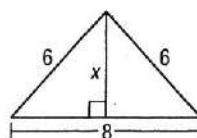**6.** Find x.
- **F** 3
- **G** 4
- **H** $4\sqrt{3}$
- **J** $2\sqrt{5}$

6. _____

7. Which set of measures could represent the lengths of the sides of a right triangle?
- **A** 9, 40, 41
- **B** 8, 30, 31
- **C** 7, 8, 15
- **D** $\sqrt{2}, \sqrt{3}, \sqrt{6}$

7. _____

8. Find c.
- **F** 7
- **G** $7\sqrt{2}$
- **H** $7\sqrt{3}$
- **J** 14

8. _____
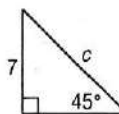
9. Find the perimeter of a square if the length of its diagonal is 12 inches. Round to the nearest tenth.
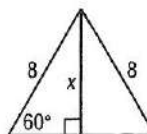- **A** 8.5 in.
- **B** 33.9 in.
- **C** 48 in.
- **D** 67.9 in.

9. _____

10. Find x.
- **F** 4
- **G** $4\sqrt{2}$
- **H** $4\sqrt{3}$
- **J** $8\sqrt{3}$

10. _____

Assessment

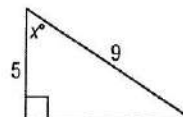## 8   Chapter 8 Test, Form 2A *(continued)*

11. Find x to the nearest tenth.

    A 5.8   **C** 8.1
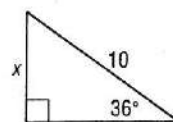
    B 5.9   **D** 17.3   11. _____

12. Find x to the nearest degree.

    F 56   **H** 34

    G 45   **J** 29   12. _____

13. If a 20-foot ladder makes a 65° angle with the ground, how many feet up a wall will it reach? Round your answer to the nearest tenth.

    A 8.5 ft   **B** 10 ft   **C** 18.1 ft   **D** 42.9 ft   13. _____

14. A ship's sonar finds that the angle of depression to a wreck on the bottom of the ocean is 12.5°. If a point on the ocean floor is 60 meters directly below the ship, how many meters is it from that point on the ocean floor to the wreck? Round your answer to the nearest tenth.

    F 277.2 m   **G** 270.6 m   **H** 61.5 m   **J** 13.3 m   14. _____

15. Find the angle of elevation of the sun if a building 100 feet tall casts a shadow 150 feet long. Round to the nearest degree.

    A 60°   **B** 48°   **C** 42°   **D** 34°   15. _____

16. When the Sun's angle of elevation is 73°, a tree tilted at an angle of 5° from the vertical casts a 20-foot shadow on the ground. Find the length of the tree to the nearest tenth of a foot.

    F 6.3 ft   **H** 51.1 ft

    G 19.2 ft   **J** 219.4 ft   16. _____

17. In $\triangle CDE$, $m\angle C = 52$, $m\angle D = 17$, and $e = 28.6$. Find c to the nearest tenth.

    A 77.1   **B** 49.1   **C** 24.1   **D** 18.4   17. _____

18. In $\triangle PQR$, $p = 56$, $r = 17$, and $m\angle Q = 110$. Find q to the nearest tenth.

    F 4076.2   **G** 63.8   **H** 52.6   **J** 3.1   18. _____

19. Find the component form of $\overrightarrow{CD}$ with $C(5, -7)$ and $D(-3, 9)$.

    A $\langle -2, 2 \rangle$ **B** $\langle 2, 2 \rangle$ **C** $\langle 8, -16 \rangle$ **D** $\langle -8, 16 \rangle$ 19. _____

20. A pilot is flying due east at a speed of 300 miles per hour and wind is blowing due north at 50 miles per hour. What is the magnitude of the resultant velocity of the plane?

    F 300 mph   **G** 350 mph   **H** about 304 mph   **J** 2500 mph   20. _____

Bonus From a window 20 feet above the ground, the angle of elevation to the top of another building is 35°. The distance between the buildings is 52 feet. Find the height of the building to the nearest tenth of a foot.   **B:** _____