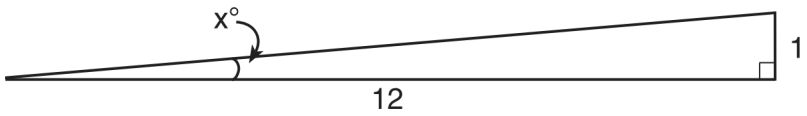
Unit 8 - Right Triangle Test Review

Name: _____ **Date:** _____

1. To build a handicapped-access ramp, the building code states that for every 1 inch of vertical rise in height, the ramp must extend out 12 inches horizontally, as shown in the diagram below. 1. _____



What is the angle of inclination, x, of this ramp, to the *nearest hundredth of a degree*?

A. 4.76 B. 4.78 C. 85.22 D. 85.24

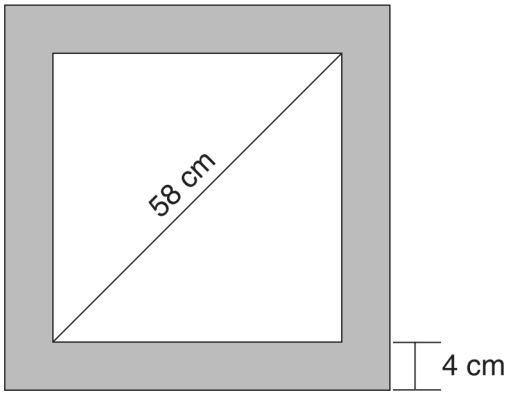
2. In right triangle ABC, $m\angle A = 32^\circ$, $m\angle B = 90^\circ$, and $AC = 6.2\,\text{cm}$. What is the length of $\overline{BC}$, to the *nearest tenth of a centimeter*? 2. _____

A. 3.3 B. 3.9 C. 5.3 D. 11.7

3. In a right triangle, $\sin(40 - x)^\circ = \cos(3x)^\circ$. What is the value of x? 3. _____

A. 10 B. 15 C. 20 D. 25

4. Keira has a square poster that she is framing and placing on her wall. The poster has a diagonal 58 cm long and fits exactly inside the frame. The width of the frame around the picture is 4 cm. 4. _____

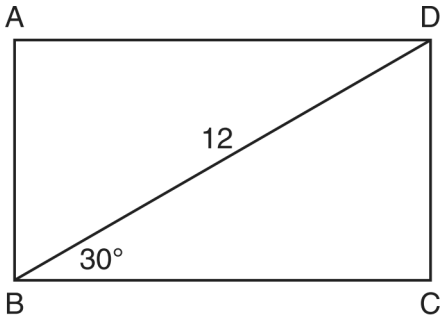


Determine and state the total area of the poster and frame to the *nearest tenth of a square centimeter*.

5. In right triangle ABC, $m\angle C = 90°$. If $\cos B = \frac{5}{13}$, which function also equals $\frac{5}{13}$? 5. _____

A. $\tan A$ B. $\tan B$ C. $\sin A$ D. $\sin B$

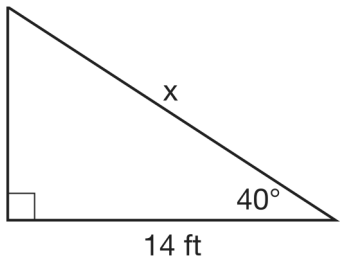
6. The diagram shows rectangle $ABCD$, with diagonal $\overline{BD}$. 6. _____



What is the perimeter of rectangle $ABCD$, to the *nearest tenth*?

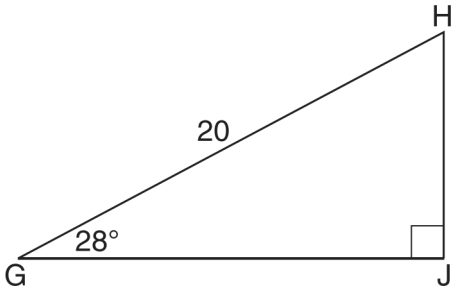
A. 28.4 B. 32.8 C. 48.0 D. 62.4

7. Given the right triangle in the diagram below, what is the value of x, to the *nearest foot*? 7. _____



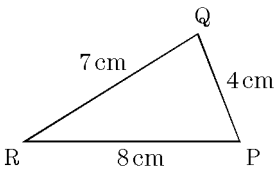
A. 11 B. 17 C. 18 D. 22

8. When instructed to find the length of $\overline{HJ}$ in right triangle HJG, Alex wrote the equation $\sin 28^\circ = \frac{HJ}{20}$ while Marlene wrote $\cos 62^\circ = \frac{HJ}{20}$. Are both students' equations correct? Explain why. 8. _____



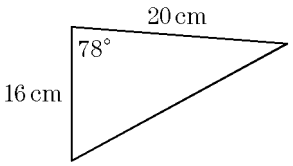
9. To the nearest degree, what is the measure of the smallest angle? 9. _____

A. 29 B. 30 C. 32 D. 35



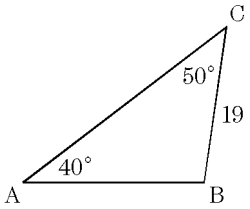
10. To the nearest whole number, how long is the missing side of the triangle? 10. _____

A. 19 B. 23 C. 34 D. 42

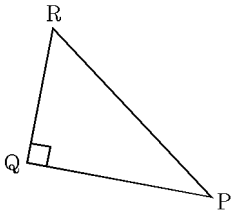


11. To the nearest tenth of a centimeter, what is the length of side AB? 11. _____

A. 15.9 B. 22.6 C. 24.8 D. 35.6

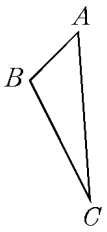


12. In the triangle below, $\sin P = \frac{5}{13}$. Find $\cos R$. 12. _____



A. $\frac{12}{13}$ B. $\frac{5}{12}$ C. $\frac{13}{12}$ D. $\frac{5}{13}$

13. For the triangle shown, $m\angle B = 90$ and $\sin C = \frac{7}{25}$. What is $\sin A$? 13. _____

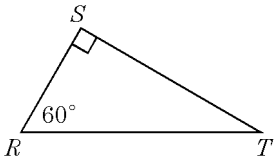


A. $\frac{24}{7}$ B. $\frac{7}{24}$ C. $\frac{24}{25}$ D. $\frac{7}{25}$

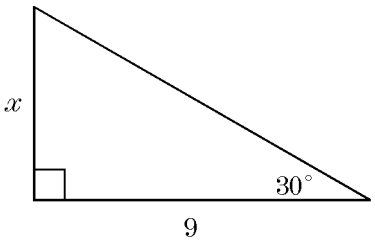
14. In right triangle ABC, if $m\angle C = 90$ and $\sin A = \frac{3}{5}$, $\cos B$ is equal to ____. 14. _____

A. $\frac{3}{5}$ B. $\frac{4}{5}$ C. $\frac{3}{4}$ D. $\frac{4}{3}$

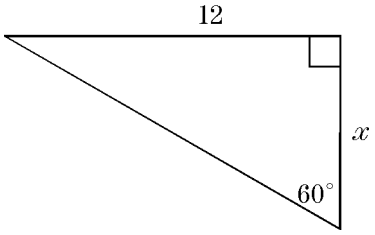
15. In the diagram, $ST = 9\sqrt{3}$. Find SR. 15. _____



16. Determine x in exact form. 16. _____



17. Determine x in exact form. 17. _____

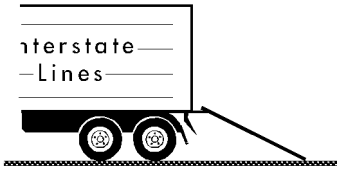


18. In a right triangle, the hypotenuse is 10 and the two legs are the same length. What is the area of the triangle? 18. _____

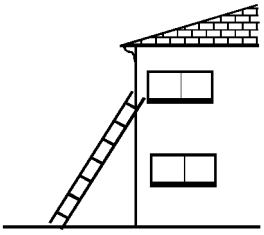
19. In a right triangle, the hypotenuse is 6 and one leg is $3\sqrt{2}$. What is the area of the triangle? 19. _____

20. A square has a perimeter of 24 units. What is the length of the diagonal of the square? 20. _____

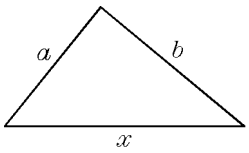
21. One end of a ramp is raised to the back of a truck, 1.5 meters above the ground (see figure). If the ramp is 4 meters long, approximately how far behind the truck is the other end of the ramp? 21. _____



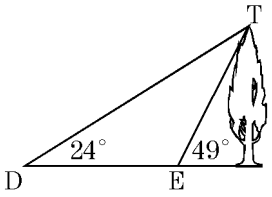
22. A ladder leans against a second-story window, as shown in the figure. If the window is 16.5 feet above the ground, and the base of the ladder is 4 feet from the house, how long is the ladder? 22. _____



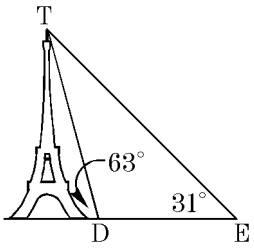
23. In the diagram, $a = 6$, $b = 8$, and x is the length of the *longest* side. For what value(s) of x will the triangle be an obtuse triangle? 23. _____



24. The diagram represents points D and E from which the lines of sight to a treetop at T make angles of 24° and 49°, respectively, with $\overline{DE}$. The length of $\overline{DE}$ is 53.0 m. Calculate the height of the tree to the nearest tenth of a meter. 24. _____



25. Daniel is at point D and Edward is at point E. Daniel looks up at an angle of 63° from $\overline{DE}$ to see the top of the Eiffel Tower at T, and Edward looks up at it with an angle of 31°. The length of $\overline{DE}$ is 346.4 m. How high is the Eiffel Tower to the nearest tenth of a meter? 25. _____



Unit 8 - Right Triangle Test Review 3/26/2018

1.
Answer: A

2.
Answer: A

3.
Answer: D

4.
Answer: 2402.2

5.
Answer: C

6.
Answer: B

7.
Answer: C

8.
Answer: Yes, and explanation.

9.
Answer: B
Objective: G.SRT.11

10.
Answer: B
Objective: G.SRT.11

11.
Answer: B
Objective: G.SRT.11

12.
Answer: D
Objective: G.SRT.7

13.
Answer: C
Objective: G.SRT.7

14.
Answer: A
Objective: G.SRT.7

15.
Answer: 9

16.
Answer: $3\sqrt{3}$

17.
Answer: $4\sqrt{3}$

18.
Answer: 25

19.
Answer: 9

20.
Answer: $6\sqrt{2}$ units

21.
Answer: ≈ 3.7 m

22.
Answer: ≈ 17 ft

23.
Answer: $x > 10$

24.
Answer: 38.5 m

25.
Answer: 300.0 m