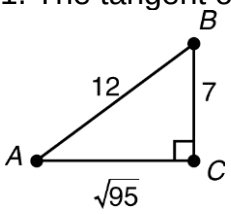
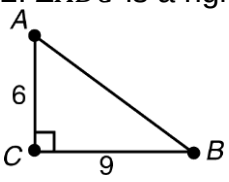
Geometry Chapter 7 Review Name:_____
Right Triangles

Use this review to help prepare for the Chapter 7 Test. The answers are attached at the end of the document.

1. The tangent of $\measuredangle B$ is _____.

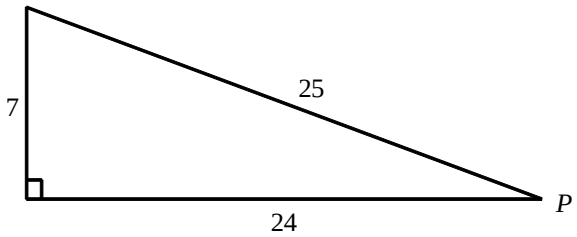


2. ΔABC is a right triangle. *AB* = _____.



3. Find the altitude of an isosceles triangle with base 10 and congruent sides of length 9.

4. Find sin *P*, cos *P*, tan *P*.



5. For each set of numbers, determine whether the numbers represent the lengths of the sides of an acute triangle, a right triangle, an obtuse triangle, or no triangle.

A. 6, 9, 12 B. 3.2, 4.2, 5.2 C. $\sqrt{38}, \sqrt{25}, \sqrt{13}$ D. 3, 4, 7

8. Classify a triangle with sides 10, 10, and 18 as acute, obtuse, or right.

9. The shorter leg of a $30°\text{-}60°\text{-}90°$ triangle is 9.7 inches long. Find the perimeter.

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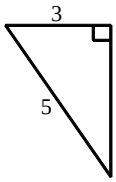
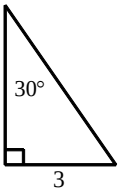
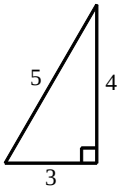
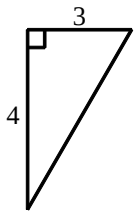
10. Which triangle below is NOT congruent to the others?

[A] [B] [C] [D]



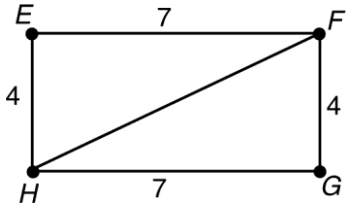




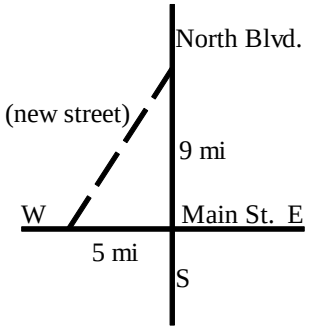


13. To find the height of a tower, a surveyor positions a transit that is 2 m tall at a spot 30 m from the base of the tower. She measures the angle of elevation to the top of the tower to be 59 ◦. What is the height of the tower, to the nearest meter?

14. If *EFGH* is a rectangle, what is *FH*?



15. The city commission wants to construct a new street that connects Main Street and North Boulevard as shown in the diagram below. The construction cost has been estimated at $110 per linear foot. Find the estimated cost for constructing the street. (1 mile = 5280 ft)



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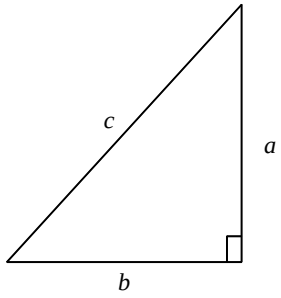
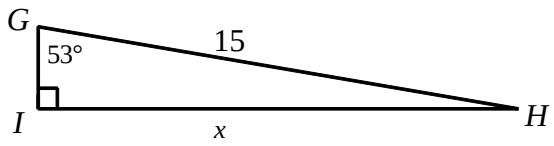
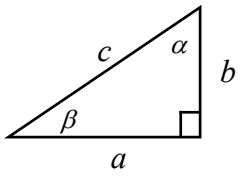
16. Find the area of this right triangle if $b = 8$ and $c = 10$.



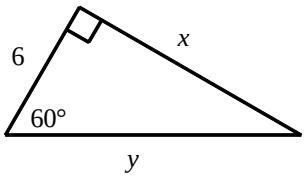
17. Find the value of *x*, to the nearest whole number. (not drawn to scale)



18. Solve the right triangle: $\alpha = 30°$ and $a = 18$; find β, *b*, and *c*



19. Find the value of *x* and *y*.



20. Name 3 Pythagorean Triples (no multiples).

21. A radio station is going to construct a 6-foot tower for a new antenna. The tower will be supported by three cables, each attached to the top of the tower and to points on the roof of the building that are 8 feet from the base of the tower. Find the total length of the three cables. Draw it.

[A] 50 ft [B] 40 ft [C] 30 ft [D] 10 ft

22. Choose the sets that are possible side lengths of a right triangle.

A. 1, 1, 2 B. 1, 1, $\sqrt{2}$ C. 3, 4, 7 D. 3, 4, 5

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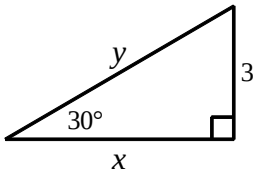
23. The length of the diagonal of a square is 22. What is the length of each side?

24. Find the value of x and y.



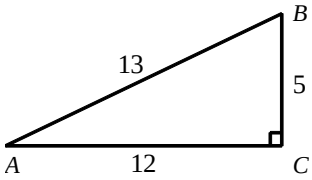
25. What is the length of an altitude of an equilateral triangle with side lengths $8\sqrt{3}$?

26. If the side lengths of a triangle are 7, 6, and 9, the triangle _____.

[A] is an acute triangle [B] is a right triangle

[C] cannot be formed [D] is an obtuse triangle

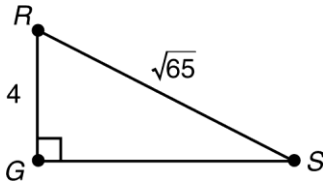
27. Write cos *A*.



[A] $\frac{12}{5}$ [B] $\frac{5}{12}$

[C] $\frac{12}{13}$ [D] $\frac{5}{13}$

28. Find tan *S*.



29. Liola drives 21 km up a hill that is at a grade of $13°$. What horizontal distance, to the nearest tenth of kilometer, has she covered?

[A] 4.7 km [B] 12.1 km [C] 4.8 km [D] 20.5 km

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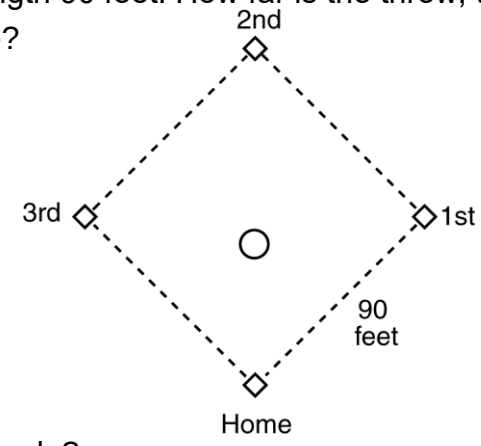
30. A baseball "diamond" is a square of side length 90 feet. How far is the throw, to one decimal place, from home plate to second base?



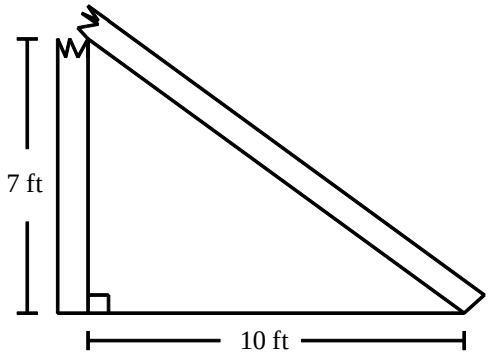
31. Which set of lengths cannot form a right triangle?

[A] 7 mm, 8 mm, 10 mm [B] 3 mm, 4 mm, 5 mm

[C] 6 mm, 8 mm, 10 mm [D] 12 mm, 16 mm, 20 mm

32. A telephone pole breaks and falls as shown.

To the nearest foot, what was the original height of the pole?

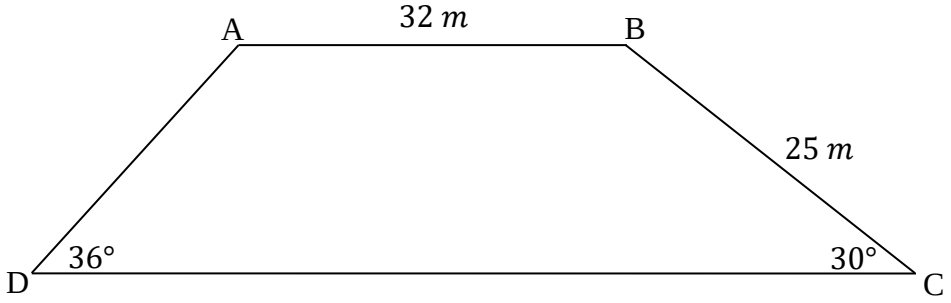


[A] 19 ft [B] 20 ft

[C] 21 ft [D] 18 ft

33. What is the length of the diagonal of a square with side lengths $7\sqrt{2}$?

34. Find the perimeter and area of Trapezoid ABCD.



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[1] $\frac{\sqrt{95}}{7}$

[2] $\sqrt{117}$

[3] $\sqrt{56}$ or $2\sqrt{14}$

[4] $\sin P = \frac{7}{25}, \cos P = \frac{24}{25}, \tan P = \frac{7}{24}$

[5] A. obtuse
B. acute
C. right
D. no

[8] obtuse

[9] $(29.1 + 9.7\sqrt{3})$ in.
=45.9 in.

[10] [B]

[13] 52 m

[14] $\sqrt{65}$

[15] $5,979,701.99

[16] 24

[17] 12

[18] $\beta = 60°$
$b = 18\sqrt{3} = 31.18$
$c = 36$

[19] $x = 6\sqrt{3}$, $y = 12$

[20]

[21] 30 feet

[22] B and D

[23] $11\sqrt{2}$

[24] $x = 3\sqrt{3}, y = 6$

[25] 12

[26] [A]

[27] [C]

[28] $\frac{4}{7}$

[29] [D]

[30] 127.3 ft

[31] [A]

[32] [A]

[33] 14

[34] Perimeter = 149.12 m
Area = 642.85 m^2