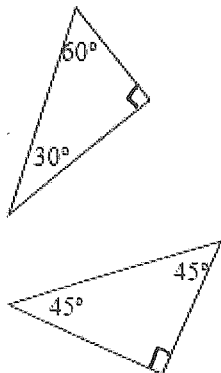


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1. Fill in the side lengths of each right triangle.

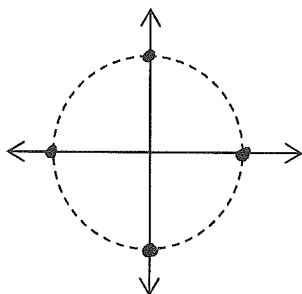


Evaluate each of the given trig functions.

- 2. $\cot 60^\circ$
- 3. $\csc 45^\circ$
- 4. $\sec 30^\circ$

5. Find the coterminal angle for -585° where $0 \leq \theta < 360^\circ$ and sketch it in the proper quadrant. Label the reference angle and side lengths, then find the values of the 6 trig functions.

Label the coordinates of each given point on the unit circle, then evaluate the trigonometric functions listed below.



- 6. $\cos 270^\circ =$
- 7. $\sec 180^\circ =$
- 8. $\tan 90^\circ =$

Draw and label a triangle in Quad I to solve.

- 9. Evaluate $\tan(\sin^{-1} 5/7)$.
- 10. If $\cos \Theta = 2/3$, find $\tan \Theta$.

#11-13 ok to use calculator. Sketch diagrams and show your work.

- 11. The adjacent sides of a parallelogram are 14 & 20 cm and the obtuse angle is 123° . Find the area of the parallelogram. **Hint:** use $A = \frac{1}{2}(\text{side1})(\text{side2})(\sin \text{included angle})$
- 12. A regular octagon is inscribed in a circle whose radius measures 5 inches. Find the area of the octagon. **Hint:** use $A = \frac{1}{2}(\text{side1})(\text{side2})(\sin \text{included angle})$
- 13. The diagonals of a rhombus are **perpendicular and bisect each other**. The length of one side of the rhombus is 25 meters and the length of the longer diagonal is 48 meters.
 - a. Find the length of the shorter diagonal.
 - b. Find the measure of an **obtuse** angle of the rhombus.

CHECK #3-13

- 1 -1 -1
- 0 14
- 70.71
- 234.83
- 147.48
- $-\sqrt{2}$ $\sqrt{2}$
- $\frac{\sqrt{2}}{2}$ $\frac{\sqrt{2}}{2}$
- $\sqrt{2}$ $\frac{\sqrt{3}}{3}$
- $\frac{2\sqrt{3}}{3}$ $\frac{\sqrt{5}}{2}$
- $\frac{5\sqrt{6}}{12}$
- undefined

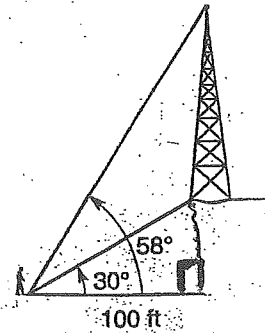
#14-18 ok to use calculator.

Clearly show all steps!

CHECK ANSWERS:

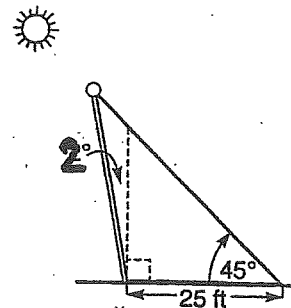
4.1 13.5 25.9 28.3 102.3

14. **Observation** A person standing 100 feet from the bottom of a cliff notices a tower on top of the cliff. The angle of elevation to the top of the cliff is 30° . The angle of elevation to the top of the tower is 58° . How tall is the tower?



15. **Recreation** The swimming pool at Perris Hill Plunge is 50 feet long and 25 feet wide. The bottom of the pool is slanted so that the water depth is 3 feet at the shallow end and 15 feet at the deep end. What is the angle of elevation at the bottom of the pool? *Draw a diagram.*

16. **Street Lighting** A lamppost tilts toward the sun at a 2° angle from the vertical and casts a 25-foot shadow. The angle from the tip of the shadow to the top of the lamppost is 45° . Find the length of the lamppost.



17. The sides of a triangle measure 13.4 centimeters, 18.7 centimeters, and 26.5 centimeters. Find the measure of the angle with the least measure. *Draw a diagram.*

18. **Orienteering** During an orienteering hike, two hikers start at point A and head in a direction 30° west of south to point B. They hike 6 miles from point A to point B. From point B, they hike to point C and then from point C back to point A, which is 8 miles directly north of point C. How many miles did they hike from point B to point C?

