

T-7 Worksheet (Review)

Name _____

Make a sketch of the given angle and find the measure of the reference angle.

1. 107°

2. 292°

3. $138^\circ 10'$

The terminal side of an angle with measure θ in standard position passes through the given point. Evaluate $\sin\theta$, $\cos\theta$ and $\tan\theta$.

4. P(-6,-8)

5. P (5,10)

6. P(-2,3)

7. P(4,3)

θ is an angle in standard position which terminates in the given quadrant. One of the functions $\sin\theta$, $\cos\theta$, or $\tan\theta$ is given. Find the other two trig functions.

8. $\tan\theta = -\frac{3}{5}$, Quad II

9. $\cos\theta = -\frac{3}{5}$, Quad III

Find the four-significant-digit approximation of the given trigonometric function values:

10. $\cos 25^\circ 8' =$

11. $\cos 27^\circ 46' =$

12. $\sec 83^\circ 36' =$

13. $\sec 53^\circ 36' =$

14. $\sin 62^\circ 35' =$

15. $\csc 54^\circ 22' =$

Find the measure of each positive acute angle A to the nearest minute:

16. $\tan A = 0.6317$

17. $\sin A = 0.5698$

18. $\csc A = 1.809$

19. $\cot A = 1.218$

20. $\tan A = 2.005$

21. $\cot A = 75.62$

Find the required function:

22. Given $\sin 30^\circ = \frac{1}{2}$

$\cos 30^\circ =$

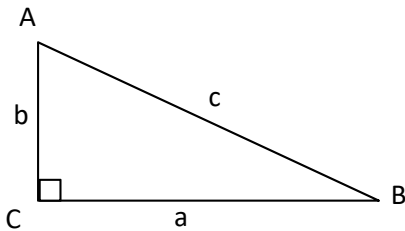
$\tan 30^\circ =$

23. Given $\sin 60^\circ = \frac{\sqrt{3}}{2}$

$\cos 60^\circ =$

$\tan 60^\circ =$

Any trigonometric function of a positive acute angle is equal to the co-function of the complementary angle. (Cosine literally means "complement's sine"; cotangent means "complement's tangent"; and cosecant means "complement's secant.")



$\sin A = \cos B = \frac{a}{c}$

$\cos A = \sin B = \frac{b}{c}$

$\tan A = \cot B = \frac{a}{b}$

$\sec A = \csc B = \frac{c}{b}$

Use the information above to complete the following:

24. $\sin 13^\circ 43' = \cos$ _____

25. $\sin 89^\circ 10' = \cos$ _____

26. $\cos 32^\circ 9' = \sin$ _____

State the quadrant in which each angle terminates:

27. 300°

28. 101°

29. 148°

30. 351°

31. 296°

32. 87°

33. Find the exact values for all six trig functions of 45° .

Use a calculator to find the following trig function values:

34. $\tan 73^\circ 47' =$

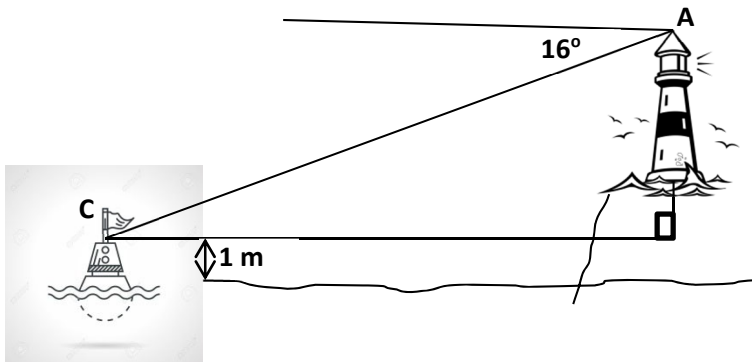
Find the angles (to the nearest minute) represented by the following, where $0^\circ < A < 90^\circ$

35. $\sin A = 0.7953$

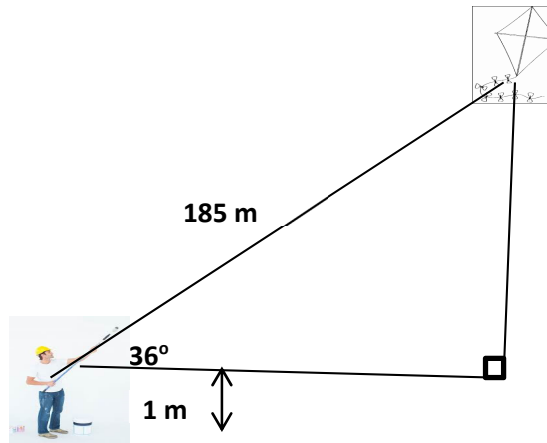
36. $\cos A = 0.7953$

Solve the following problems.

37. For the buoy and the lighthouse, find the line of sight distance, AC, from the top of the lighthouse to the buoy.



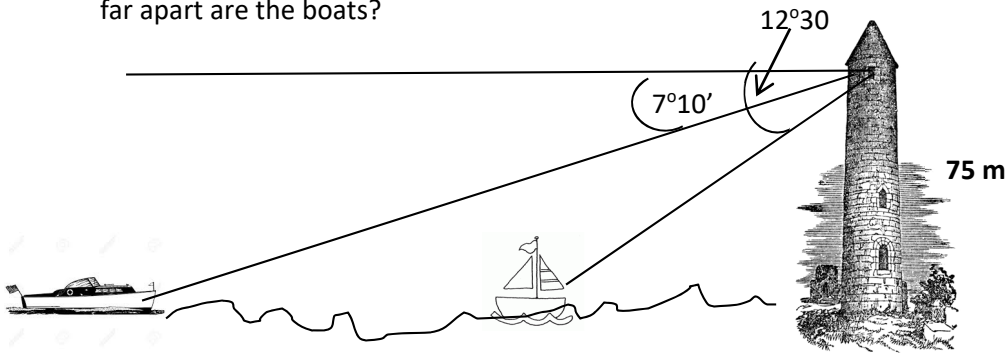
38. A kite string is 185 m long and makes an angle of 36° with the horizontal. What is the altitude of the kite? (assume that the string is a straight line and that it is held one meter above the ground.)



39. A ladder is 12.2 meters long can be placed so that it will reach a window 10.1 meters above the ground on one side of the street. If a person tips it back without moving its foot, it will reach a window 6.4 m above the ground on the other side. Find the width of the street.

40. The Hirsch Building and the County Hospital are 38 m apart. From a window in the Hirsch Building, the angle of elevation to the top of the hospital is 73° . From the same window the angle of depression to the ground at the base of the hospital is 64° . Find the height of the hospital.

41. Two boats are observed from a tower 75 meters above a lake. The angles of depression are $12^\circ 30'$ and $7^\circ 10'$. How far apart are the boats?



42. A certain tree grows vertically on a hill which makes an angle of $8^\circ 15'$ with the horizontal. When the angle of elevation to the sun is $27^\circ 20'$ the end of the tree's shadow is 76 meters directly downhill from the base of the tree. Find the height of the tree.

