

A2.A.62: Determining Trigonometric Functions: Find the value of trigonometric functions, if given a point on the terminal side of angle

- 1 Angle θ is in standard position and $(-4, 0)$ is a point on the terminal side of θ . What is the value of $\sec \theta$?
 - 1) -4
 - 2) -1
 - 3) 0
 - 4) undefined
- 2 If θ is an angle in standard position and $P(-3, 4)$ is a point on the terminal side of θ , what is the value of $\sin \theta$?
 - 1) $\frac{3}{5}$
 - 2) $-\frac{3}{5}$
 - 3) $\frac{4}{5}$
 - 4) $-\frac{4}{5}$
- 3 If the terminal side of angle θ passes through point $(-4, 3)$, what is the value of $\cos \theta$?
 - 1) $\frac{3}{5}$
 - 2) $-\frac{3}{5}$
 - 3) $\frac{4}{5}$
 - 4) $-\frac{4}{5}$
- 4 If the terminal side of angle θ passes through point $(-3, -4)$, what is the value of $\sec \theta$?
 - 1) $\frac{5}{3}$
 - 2) $-\frac{5}{3}$
 - 3) $\frac{5}{4}$
 - 4) $-\frac{5}{4}$
- 5 Circle O has a radius of 2 units. An angle with a measure of $\frac{\pi}{6}$ radians is in standard position. If the terminal side of the angle intersects the circle at point B , what are the coordinates of B ?
 - 1) $\left(\frac{\sqrt{3}}{2}, \frac{1}{2}\right)$
 - 2) $(\sqrt{3}, 1)$
 - 3) $\left(\frac{1}{2}, \frac{\sqrt{3}}{2}\right)$
 - 4) $(1, \sqrt{3})$
- 6 Point $A\left(\frac{1}{2}, \frac{\sqrt{3}}{2}\right)$ is on the unit circle whose center is the origin. If θ is an angle in standard position whose terminal ray passes through point A , what is the value of $\sin \theta$?
 - 1) $\frac{1}{2}$
 - 2) $\frac{\sqrt{3}}{2}$
 - 3) $\frac{1}{\sqrt{3}}$
 - 4) $\frac{\sqrt{3}}{1}$
- 7 If θ is an angle in standard position and its terminal side passes through the point $(-3, 2)$, find the exact value of $\csc \theta$.

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Answer Section

1 ANS: 2

$$\sec \theta = \frac{\sqrt{x^2 + y^2}}{x} = \frac{\sqrt{(-4)^2 + 0^2}}{-4} = \frac{4}{-4} = -1$$

REF: 011520a2

2 ANS: 3

$$\sin \theta = \frac{y}{\sqrt{x^2 + y^2}} = \frac{4}{\sqrt{(-3)^2 + 4^2}} = \frac{4}{5}$$

REF: 010616b

3 ANS: 4

$$\cos \theta = \frac{x}{\sqrt{x^2 + y^2}} = \frac{-4}{\sqrt{(-4)^2 + 3^2}} = -\frac{4}{5}$$

REF: 068628siii

4 ANS: 4

$$\cos \theta = -\frac{3}{5} \quad \sec \theta = -\frac{5}{3}$$

REF: 011621a2

5 ANS: 2

$$x = 2 \cdot \frac{\sqrt{3}}{2} = \sqrt{3} \quad y = 2 \cdot \frac{1}{2} = 1$$

REF: 061525a2

6 ANS:

$$\frac{\sqrt{3}}{2}$$

REF: 018514siii

7 ANS:

$$\frac{\sqrt{13}}{2} \cdot \sin \theta = \frac{y}{\sqrt{x^2 + y^2}} = \frac{2}{\sqrt{(-3)^2 + 2^2}} = \frac{2}{\sqrt{13}} \cdot \csc \theta = \frac{\sqrt{13}}{2}.$$

REF: fall0933a2