1. If $\theta$ is an angle in standard position and $P(-3,4)$ is a point on the terminal side of $\theta$, what is the value of $\sin \theta$?
   1) $\frac{3}{5}$
   2) $\frac{-3}{5}$
   3) $\frac{4}{5}$
   4) $\frac{-4}{5}$

2. If the terminal side of angle $\theta$, in standard position, passes through point $(-4,3)$, what is the numerical value of $\sin \theta$?
   1) $\frac{3}{5}$
   2) $\frac{4}{5}$
   3) $\frac{-3}{5}$
   4) $\frac{-4}{5}$

3. If the terminal side of angle $\theta$ 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. A circle centered at the origin has a radius of 10 units. The terminal side of an angle, $\theta$, intercepts the circle in Quadrant II at point $C$. The $y$-coordinate of point $C$ is 8. What is the value of $\cos \theta$?
   1) $\frac{3}{5}$
   2) $\frac{3}{4}$
   3) $\frac{3}{5}$
   4) $\frac{4}{5}$

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) $\left(\sqrt{3}, 1\right)$
   3) $\left(\frac{1}{2}, \frac{\sqrt{3}}{2}\right)$
   4) $\left(1, \sqrt{3}\right)$

6. Angle $\theta$ is in standard position and $(-4,0)$ is a point on the terminal side of $\theta$. What is the value of $\sec \theta$?
   1) $-4$
   2) $-1$
   3) $0$
   4) undefined
7 If the terminal side of angle \( \theta \) 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) \( -\frac{5}{4} \)

8 The origin of a coordinate grid is labeled \( A \). Line segment \( AB \) forms an angle of 30° with the \( x \)-axis. If \( AB = 8 \), the coordinates of \( B \) are:

1) \( (6,4) \)
2) \( (8 \cos 30°, 8 \sin 30°) \)
3) \( (8 \sin 30°, 8 \cos 30°) \)
4) \( (4, 4\sqrt{3}) \)

9 An angle, \( \theta \), is in standard position and its terminal side passes through the point \((2,-1)\). Find the exact value of sin \( \theta \).

10 If \( \theta \) is an angle in standard position and its terminal side passes through the point \((-3,2)\), find the exact value of csc \( \theta \).

11 Determine the exact value of csc \( P \) if \( P \) is an angle in standard position and its terminal side passes through the point \((5,-8)\).
F.TF.A.2: Determining Trigonometric Functions 4
Answer Section

1 ANS: 3
\[
\sin \theta = \frac{y}{\sqrt{x^2 + y^2}} = \frac{4}{\sqrt{(-3)^2 + 4^2}} = \frac{4}{5}
\]
REF: 010616b

2 ANS: 1
A reference triangle can be sketched using the coordinates \((-4,3)\) in the second quadrant to find the value of \(\sin \theta\).

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: 1

5 ANS: 2
\[
x = 2 \cdot \frac{\sqrt{3}}{2} = \sqrt{3} \quad y = 2 \cdot \frac{1}{2} = 1
\]
REF: 061525a2

6 ANS: 2
\[
\sec \theta = \frac{x}{\sqrt{x^2 + y^2}} = \frac{\sqrt{(-4)^2 + 0^2}}{-4} = \frac{4}{-4} = -1
\]
REF: 011520a2
7 ANS: 2
\[ \cos \theta = \frac{3}{5} \quad \sec \theta = -\frac{5}{3} \]

REF: 011621a2

8 ANS: 2 REF: fall9920b

9 ANS:
\[ \frac{-1}{\sqrt{2^2 + (-1)^2}} = -\frac{1}{\sqrt{5}} \]

REF: 061832aii

10 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

11 ANS:
\[ \sin P = \frac{y}{\sqrt{x^2 + y^2}} = \frac{-8}{\sqrt{5^2 + (-8)^2}} = \frac{-8}{\sqrt{89}} \quad \csc P = \frac{\sqrt{89}}{8} \]

REF: 081634a2