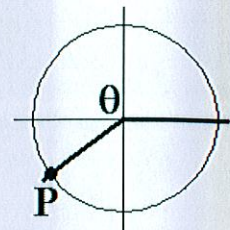


The graph on the right (**NOT** drawn to scale) shows a unit circle and an angle θ in standard position.

SCORE: ____ / 4 PTS

The coordinates of the point P on the unit circle are $(-\frac{5}{13}, -\frac{12}{13})$.

Fill in the blanks below.



[a] $\sin \theta = \underline{-\frac{12}{13}}$

[b] $\sec \theta = \underline{-\frac{13}{5}}$

[c] $\cot \theta = \underline{\frac{5}{12}}$

[d] $\cos(-\theta) = \underline{-\frac{5}{13}}$

In the diagram of a central angle on the right (**NOT** drawn to scale), the radius of the circle is 4 mm and the intercepted arc has length 3 mm. Fill in the blanks below.

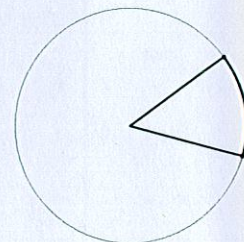
$r = 4 \text{ mm}$
 $s = 3 \text{ mm}$

SCORE: ____ / 5 PTS

[a] The measure of the central angle is $\underline{\frac{3}{4}}$ radians. $\frac{s}{r} = \frac{3 \text{ mm}}{4 \text{ mm}}$

[b] The area of the intercepted sector is $\underline{6 \text{ mm}^2}$. $\frac{1}{2} r^2 \theta = \frac{1}{2} (4 \text{ mm})^2 \frac{3}{4}$

[c] If an object is moving around the circle at a linear speed of 52 mm/s, its angular speed is $\underline{13}$ $\frac{\text{RAD}}{\text{SEC}}$.
(specify the units)
 $w = rv \rightarrow v = \frac{w}{r} = \frac{52 \text{ mm/s}}{4 \text{ mm}}$



Fill in the blanks below. Simplify all answers (including rationalizing denominators). Write "UNDEFINED" if the expression has no value.

SCORE: ____ / 3 PTS

[a] The complement of $\frac{2\pi}{7}$ radians is $\underline{\frac{3\pi}{14}}$

[b] 54 degrees = $\underline{\frac{3\pi}{10}}$ radians

[c] $\frac{7\pi}{15}$ radians = $\underline{84}$ degrees

Use the unit circle above to fill in the blanks below. Simplify all answers (including rationalizing denominators). **SCORE: _____ / 4 PTS**
Write "UNDEFINED" if the expression has no value.

[a] $\sec \frac{3\pi}{4} = \underline{-\sqrt{2}}$

[b] $\tan \frac{3\pi}{2} = \underline{\text{UNDEFINED}}$

[c] $\cot \frac{4\pi}{3} = \underline{\frac{\sqrt{3}}{3}}$

[d] $\csc \frac{11\pi}{6} = \underline{-2}$

Fill in the blanks below. Simplify all answers (including rationalizing denominators). **SCORE: _____ / 2 PTS**

[a] The smallest positive angle coterminal with $-\frac{19\pi}{3}$ is $\underline{\frac{5\pi}{3}}$

[b] $\cos\left(-\frac{19\pi}{3}\right) = \underline{\frac{1}{2}}$
