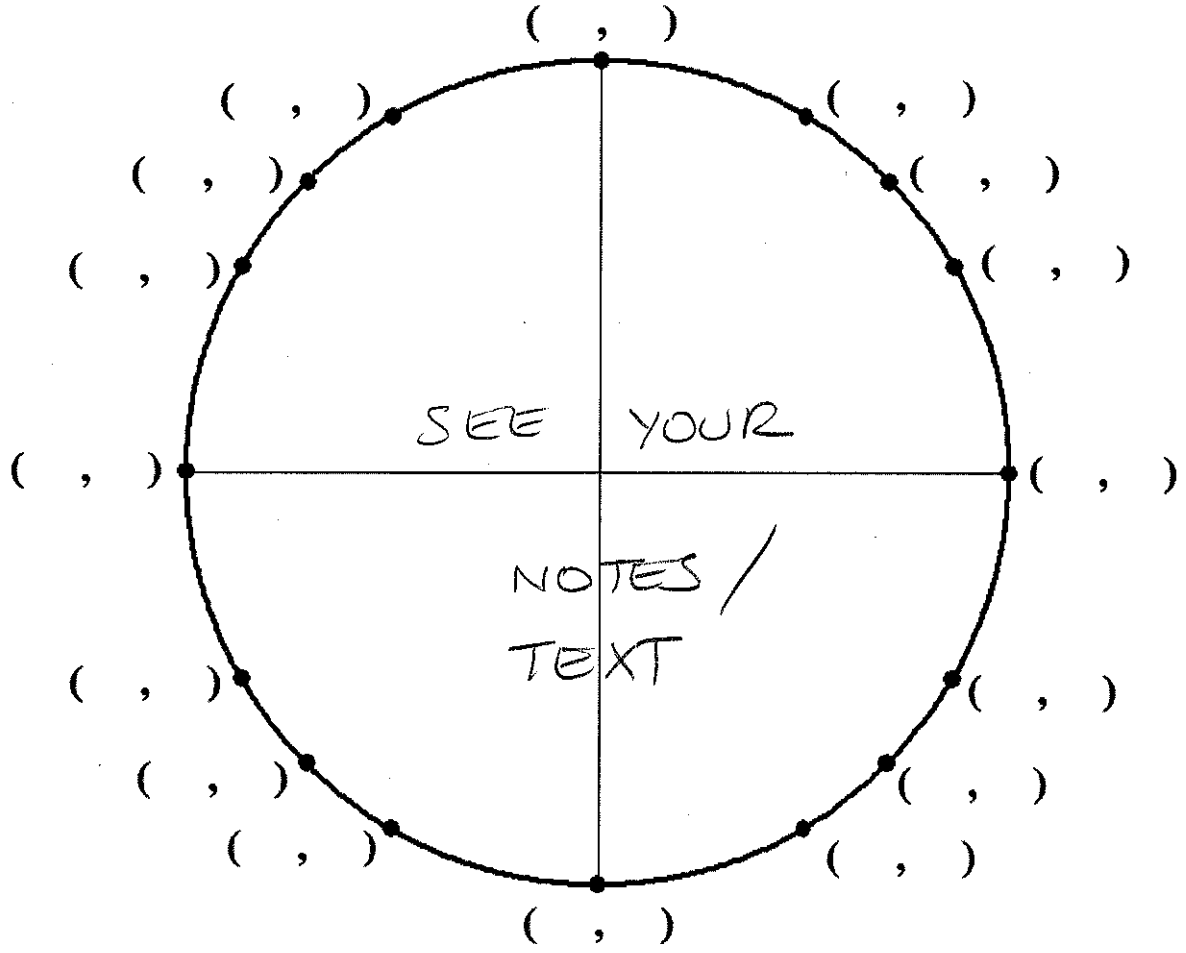
Complete the unit circle below.
Inside the circle, label the radian measure of each point.
Outside the circle, label the corresponding $x-$ and $y-$ coordinates of each point.

SCORE: _____ / 8 PTS
($\frac{1}{2}$ POINT DEDUCTED FOR EACH ERROR)



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] $\csc\frac{5\pi}{3} =$ $\frac{-2\sqrt{3}}{3}$ $\frac{1}{-\frac{\sqrt{3}}{2}}$ $\left(\frac{1}{y}\right)$

[b] $\tan\frac{3\pi}{2} =$ UNDEFINED $\frac{-1}{0}$ $\left(\frac{y}{x}\right)$

[c] $\cot\frac{11\pi}{6} =$ $-\sqrt{3}$ $\frac{\frac{\sqrt{3}}{2}}{-\frac{1}{2}}$ $\left(\frac{x}{y}\right)$

[d] $\sec\frac{7\pi}{4} =$ $\sqrt{2}$ $\frac{1}{\frac{\sqrt{2}}{2}}$ $\left(\frac{1}{x}\right)$

Fill in the blanks below. Simplify all answers (including rationalizing denominators). **SCORE:** _____ / 5 PTS
Write "UNDEFINED" if the expression has no value.

[a] $-\frac{19\pi}{3}$ is co-terminal with $\frac{5\pi}{3}$ (**NOTE**: Your answer must be between 0 and 2π) $-\frac{19\pi}{3} + \frac{24\pi}{3}$

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

[c] The supplement of $\frac{3\pi}{10}$ radians is $\frac{7\pi}{10}$ $\pi - \frac{3\pi}{10}$

[d] $\frac{5\pi}{12}$ radians = 75 degrees $\frac{5\pi}{12} \times \frac{180}{\pi}$

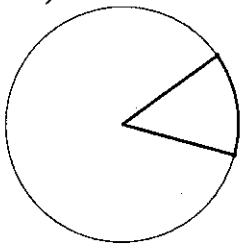
[e] 72 degrees = $\frac{2\pi}{5}$ radians $72 \times \frac{\pi}{180}$

Suppose $\sin t = -\frac{4}{5}$ and $\cos t = \frac{3}{5}$. Fill in the blanks below. Simplify all answers. **SCORE:** _____ / 2 PTS

[a] $\cos(-t) =$ $\frac{3}{5}$ $\cos t$

[b] $\sec t =$ $\frac{5}{3}$ $\frac{1}{\cos t}$

In the diagram of a central angle on the right, **SCORE:** _____ / 5 PTS
the radius of the circle is 12 mm and the intercepted arc has length 14 mm. (NOTE: The diagram is **NOT** drawn to scale.)



[a] The central angle is $\frac{7}{6}$ radians. $\frac{14mm}{12mm}$ $\left(\frac{s}{r}\right)$

[b] The area of the intercepted sector is $84\ mm^2$. $\frac{1}{2}(12mm)^2\frac{7}{6}$ $\left(\frac{1}{2}r^2\theta^R\right)$

[c] If an object is moving around the circle at a linear speed of 42 mm/s,

its angular speed is $\frac{7}{2}$ $\frac{\text{RADIANS}}{s}$ (specify the units) $\cdot\ \frac{42\ mm/s}{12mm}$ $\left(\begin{matrix} V = r\omega \\ \omega = \frac{V}{r} \end{matrix}\right)$