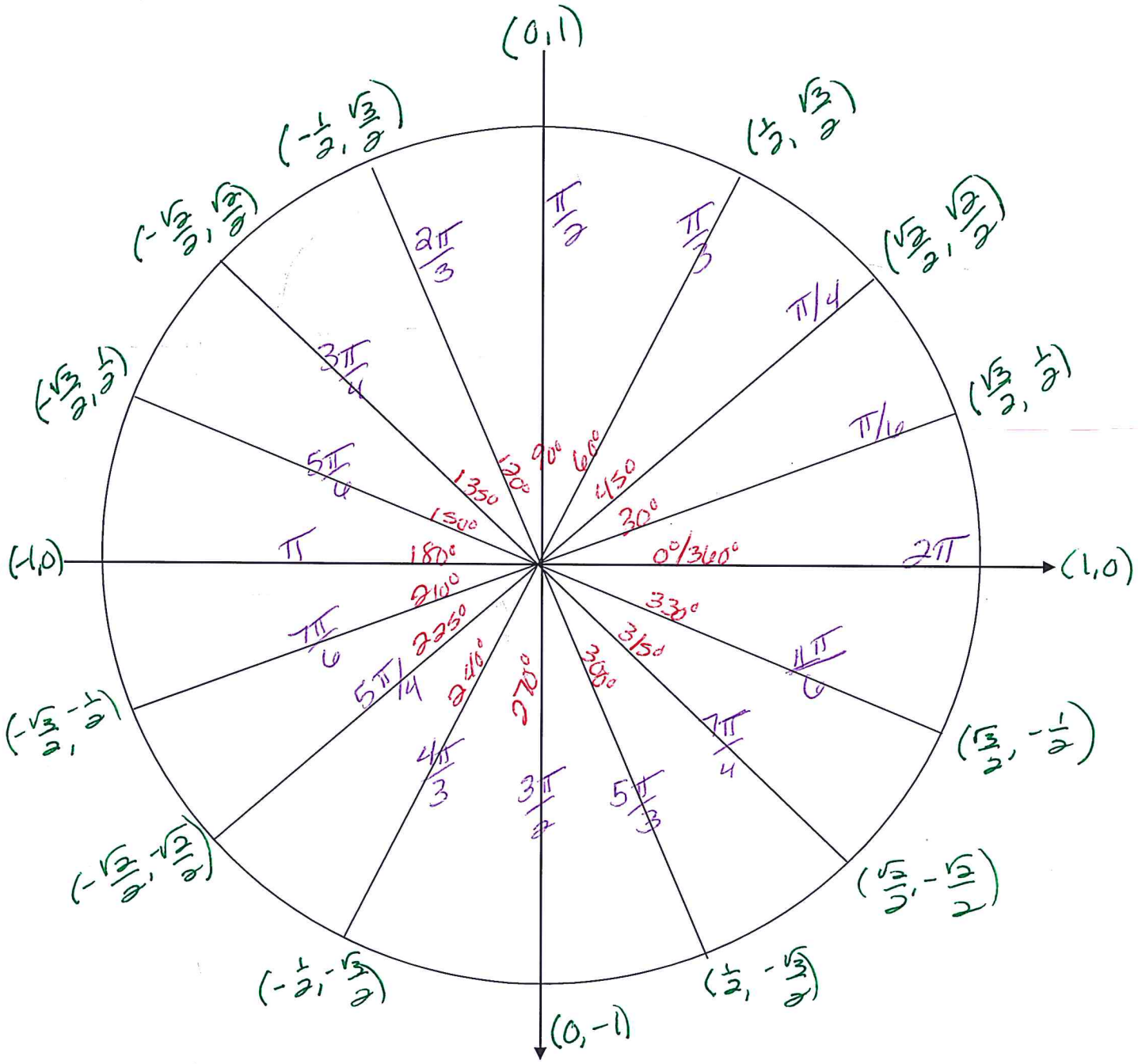
Law of Sines & Cosines and Unit Circle Review

Fill in the unit circle with the degrees, radians, and ordered pair.



Represent each trig function in terms of sine and cosine. Use the segment as a fraction bar.

1) $\tan\theta = \frac{\sin\theta}{\cos\theta}$ 2) $\sec\theta = \frac{1}{\cos\theta}$ 3) $\csc\theta = \frac{1}{\sin\theta}$

4) $\cot\theta = \frac{\cos\theta}{\sin\theta}$

Use your unit circle to find the exact value of each.

5) $\sec 240° =$ -2

$\frac{1}{-\frac{1}{2}}$

6) $\tan 60° =$ $\sqrt{3}$

$\frac{\sqrt{3}}{\frac{1}{2}}$ $\quad \frac{\sqrt{3}}{2} \cdot \frac{2}{1}$

7) $\cot \frac{\pi}{3} =$ $\frac{\sqrt{3}}{3}$

Convert.

8) Convert 154° to radians.

$\frac{154\pi}{180} = \frac{77\pi}{90}$

9) Convert $\frac{5\pi}{8}$ to degrees.

$\frac{5\pi}{8} = \frac{n\pi}{180}$

$900\pi = 8n\pi$

$225 = 2n$

$112.5°$

10) Convert 325° to radians.

$\frac{325\pi}{360} = \frac{65\pi}{72}$

11) Convert $\frac{3\pi}{7}$ to degrees.

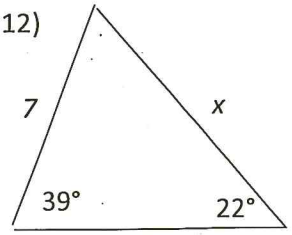
$\frac{3\pi}{7} = \frac{n\pi}{180}$

$540\pi = 7n\pi$

$77.14°$

Find the value of *x*.

12)



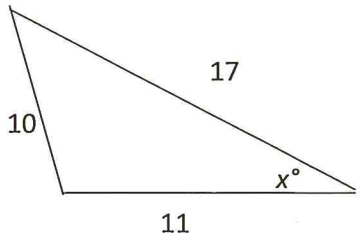
$\frac{\sin 22}{7} = \frac{\sin 39}{x}$

$x \cdot \sin 22 = 7 \sin 39$

$x = \frac{7 \cdot \sin 39}{\sin 22}$

$x \approx 9.06$

13)



$10^2 = 17^2 + 11^2 - 2(10)(17)\cos x$

$100 = 289 + 121 - 374\cos x$

$100 = 410 - 374\cos x$

$\frac{-310}{-374} = \frac{-374 \cdot \cos x}{-374}$

$.828877 = \cos x$

$\cos^{-1}(.828877) \approx x$

$34.02° \approx x$