

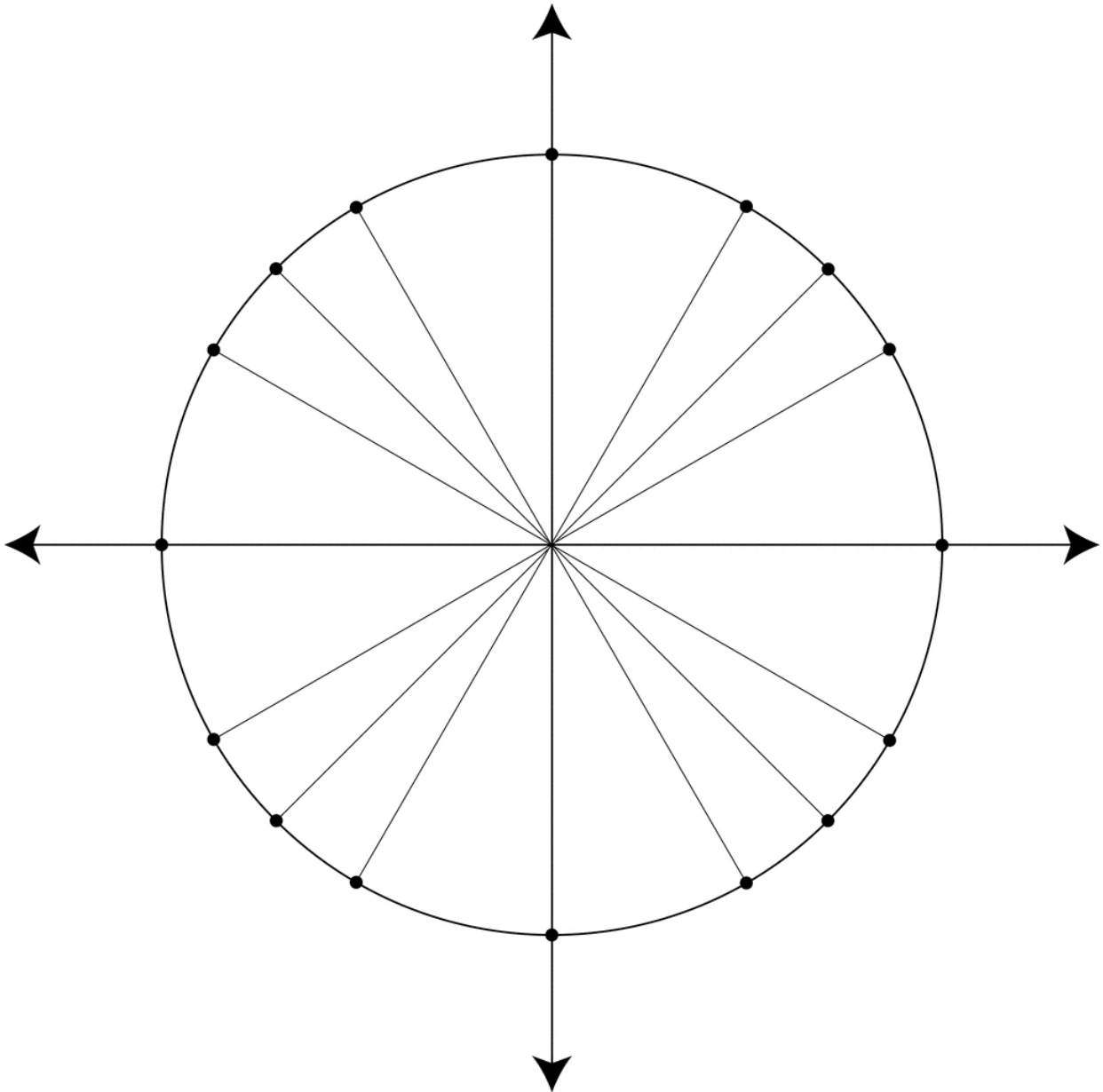
Unit #3: Trigonometry

Topic: Evaluating Trigonometric Expressions

Objective: *SWBAT find the value of a trigonometric expression by using the unit circle.*

## Warm Up #2:

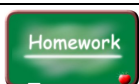
Fill in the unit circle below WITHOUT looking at your notes.



We can use the unit circle to find the exact value for individual trigonometric functions in order to evaluate a larger expression.

*Example #1:* Find the exact value of  $\frac{-5\sec^2\left(\frac{3\pi}{4}\right) - 1}{\tan\left(\frac{3\pi}{4}\right)}$

*Example #2:* Find the exact value of  $\frac{(\sin t + \tan t)^2 + \cos^2 t - \sec^2 t}{\tan t}$  when  $t = \frac{11\pi}{6}$ .



Assignment(s): Complete practice problems #1 – 14

Problem Set #3: Find the exact value for each of the following for the given value of  $t$ .

$$1) \frac{\tan^2 t + 1}{1 + \cot^2 t}; t = \frac{5\pi}{3}$$

$$2) -\frac{1}{2} \sin^2 t \cdot \cot t \cdot \csc t; t = -\frac{7\pi}{4}$$

$$3) \frac{1 - \cos^2 t}{1 + \cos t}; t = \frac{17\pi}{6}$$

$$4) \cot(t \tan + \cot); t = \frac{2\pi}{3}$$

$$5) 5 \sin t \tan t - 2 \csc t \tan t; t = -\frac{5\pi}{4}$$

$$6) \frac{\sec t - 2 \cos t}{3 \tan t \sin t}; t = \frac{5\pi}{6}$$

$$7) \frac{\cos t}{1 + \sin t} + \frac{\cos t}{1 - \sin t} ; t = \frac{7\pi}{3}$$

$$8) \frac{\tan t - \tan t \sin^2 t}{2 \sin t \cos t} ; t = -\frac{\pi}{4}$$

$$9) \sin^2 t (2 \csc^2 t - 3) ; t = \frac{3\pi}{2}$$

$$10) \frac{\cos^2 t - 1}{\sin^2 t - 1} ; t = \frac{7\pi}{6}$$

$$11) \cos t (\sec t - 4 \cos t) ; t = \frac{4\pi}{3}$$

$$12) \frac{1 - \tan^2 t}{1 + \tan^2 t} + 1 ; t = -\frac{\pi}{6}$$

$$13) \sec t \cot t - \cot t \cos t ; t = \frac{11\pi}{4}$$

$$14) \frac{1}{\sec t - \tan t} - \frac{1}{\sec t + \tan t} ; t = \frac{8\pi}{3}$$

