QUIZ FRIDAY

Label unit circle with radian values and coordinates, then evaluate all 6 trig functions.

30 points

No calculator!

QUIZ YOURSELF

Practice labeling the unit circle with radian values and coordinates.

Just complete the blank unit circles in part 1 for today. You may use part 2 later to practice for Friday's quiz.

(link provided with assignment)

Previous notes: (reminder)

$$\sin\theta = \frac{y}{r} \qquad \csc\theta = \frac{r}{y}$$

$$\cos\theta = \frac{x}{r} \qquad \sec\theta = \frac{r}{x}$$

$$\tan\theta = \frac{y}{x} \qquad \cot\theta = \frac{x}{y}$$

Sine
Cosine
Tangent

Cosecant
Secant
Cotangent

$$r^2 = x^2 + y^2$$

or

$$r = \sqrt{x^2 + y^2}$$

Notes: 5.2 unit circle → r =1

$$\sin\theta = \frac{y}{1} = y \qquad \csc\theta = \frac{1}{y}$$

$$\cos\theta = \frac{x}{1} = x \qquad \sec\theta = \frac{1}{x}$$

$$\tan\theta = \frac{y}{x} \qquad \cot\theta = \frac{x}{y}$$

Sine
Cosine
Tangent

Cosecant
Secant
Cotangent

Notes: (reminder from 5.1 resource page)

Goal: $0 \leq \theta < 2\pi$

Find the coterminal angle if the given value is too large or too small:

θ **= given angle ±** 2π**(n)**

*(where **n** is a whole #)*

Evaluating Trigonometric Functions

#5 a-e: Find the exact value

5. (a) $\sin\frac{7\pi}{6}$

$= y$

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

(b) $\cos\frac{17\pi}{6} = \cos\frac{5\pi}{6}$

$\frac{17\pi}{6} - \frac{2\pi(6)}{1(6)}$

$\frac{17\pi}{6} - \frac{12\pi}{6} = \frac{5\pi}{6}$

Coterminal

$= \boxed{\frac{-\sqrt{3}}{2}}$

(c) $\tan\frac{7\pi}{6}$ $\frac{y}{x}$

$= \frac{-\frac{1}{2}}{\frac{-\sqrt{3}}{2}}$

$= -\frac{1}{2} \cdot \frac{2}{-\sqrt{3}} = \frac{1}{\sqrt{3}}$

$= \frac{\sqrt{3}}{3}$

Also solve part d and e: *(extra problems from Mrs. Rosenow)*

(d) $\csc\frac{-5\pi}{4}$

(e) $\cot\frac{-10\pi}{3}$

(see next 2 slides)

(d) $\csc \dfrac{-5\pi}{4}$ $= \csc \dfrac{3\pi}{4}$ (coterminal; same as)

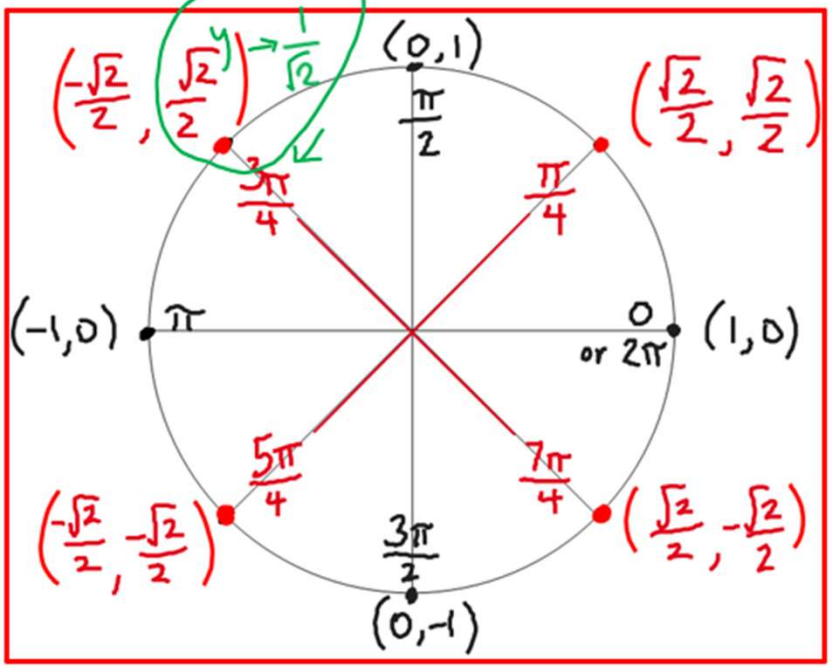
$\dfrac{r}{y}$

$-\dfrac{5\pi}{4} + \dfrac{2\pi}{1}(4)$

$= -\dfrac{5\pi}{4} + \dfrac{8\pi}{4}$

$= \dfrac{1}{\frac{\sqrt{2}}{2}}$ or $\dfrac{1}{\frac{1}{\sqrt{2}}}$ (r / y)

$= 1 \cdot \dfrac{\sqrt{2}}{1} = \boxed{\sqrt{2}}$



(e) $\cot \dfrac{-10\pi}{3}$

$= \cot \dfrac{2\pi}{3}$

$= \dfrac{x}{y} = \dfrac{-\frac{1}{2}}{\frac{\sqrt{3}}{2}}$

$= -\dfrac{1}{2} \cdot \dfrac{2}{\sqrt{3}} = -\dfrac{1}{\sqrt{3}}$

$= -\dfrac{\sqrt{3}}{3}$

$\dfrac{-10\pi}{3} + \dfrac{4\pi \cdot 3}{1 \cdot 3}$

$\dfrac{-10\pi}{3} + \dfrac{12\pi}{3}$