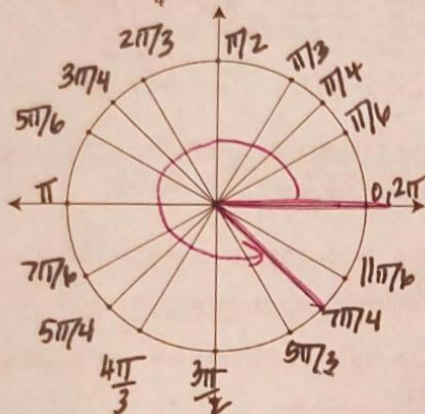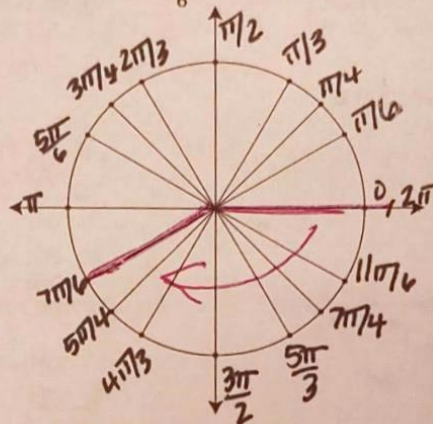Precalculus
Practice Quiz

Use your unit circle, graphs of sine, cosine, and tangent and your peach formula sheet.

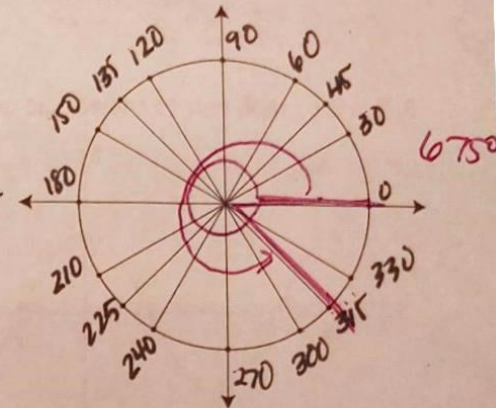1. Draw the angle measures that are given below on the unit circles provided.

   a. $\theta = \dfrac{7\pi}{4}$

   b. $\theta = -\dfrac{5\pi}{6}$

   c. $\theta = 675°$

2. In which quadrant does the terminal side of each angle lie when it is in standard position?

   a. $-\dfrac{7\pi}{4}$ ___1___

   b. $-\dfrac{\pi}{4}$ ___4___

   c. $\dfrac{5\pi}{12}$ ___1___

   d. 630° ___2___

   e. 1520° ___1___

3. Find two angles (one in a positive direction and one in a negative direction) that are coterminal to the following angle measures.

   a. 48°
   Pos: $48 + 360 = 408$
   Neg: $48 - 360 = -312$

   b. $\dfrac{-7\pi}{6} = -210$
   Pos: $-210 + 360 = 150$
   Neg: $-210 - 360 = -570$

   c. -215°
   Pos: $-215 + 360 = 145$
   Neg: $-215 - 360 = -57r$

4. Find the reference angle for the given angles below.

   a. $\theta = 324°$
   $360 - 324 = 36°$

   b. $\theta = 185°$
   $185 - 180 = 5°$

   c. $\theta = 251°$
   $251 - 180 = 71°$

   d. $\theta = 52°$
   $52°$

   e. $\theta = 580°$
   $580 - 360 = 220$
   $220 - 180 = 40°$

   f. $\theta = -\dfrac{11\pi}{3}$
   $\pi/3$

   g. $\theta = \dfrac{7\pi}{6}$
   $\pi/6$

   h. $\theta = -\dfrac{9\pi}{4}$
   $\pi/4$

5. Convert from radians to degrees or degrees to radians.

   a. 72°
   $\dfrac{72\pi}{180} = \dfrac{2\pi}{5}$

   b. $\dfrac{-15\pi}{7} \cdot \dfrac{180}{\pi} = -386°$

6. Find the values of the six trigonometric functions for angle θ in standard position if a point $(-10, 4)$ with the given coordinates lies on its terminal side.

   $$x^2 + y^2 = r^2 \rightarrow r = \sqrt{(-10)^2 + (4)^2} = 2\sqrt{29}$$

   $\sin\theta = \dfrac{y}{r}$ $\cos\theta = \dfrac{x}{r}$ $\tan\theta = \dfrac{y}{x}$ $\csc\theta = \dfrac{r}{y}$ $\sec\theta = \dfrac{r}{x}$ $\cot\theta = \dfrac{x}{y}$

   sin: $4/\sqrt{29} = 4\sqrt{29}/29$ csc: $\sqrt{29}/4$

   cos: $-10/\sqrt{29} = -10\sqrt{29}/29$ sec: $\sqrt{29}/-10$

   tan: $\dfrac{4}{-10} = -\dfrac{2}{5}$ cot: $-5/2$

7. Use the unit circle to find each value.

a) $\cot\left(-\dfrac{7\pi}{3}\right) =$ _√3/3_

b) $\sin(595°) =$ _✗_ ~~455~~

c) $\sec\left(\dfrac{3\pi}{2}\right) =$ _✓_

d) $\cos\left(\dfrac{17\pi}{6}\right) =$ _−√3/2_ ⬤

e) $\csc(-135°) =$ _−√2/2_

f) $\tan\left(-\dfrac{23\pi}{4}\right) =$ _1_

g) $\sec(1050°) =$ _____ $\dfrac{1}{\cos 1050}$

h) $\csc(9\pi) =$ _✓_ $\dfrac{1}{\sin 9\pi}$

8. Use the graph only to answer the questions.
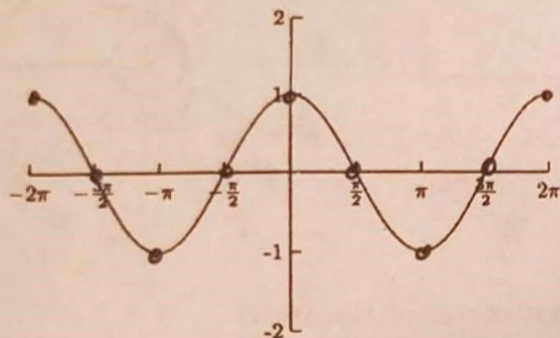
a. List all the radian measures where the values are 0?
_−3π/2, −π/2, 0, π/2, 3π/2_
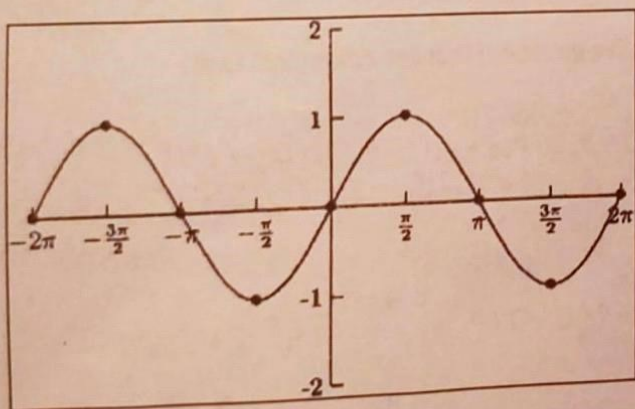
b. List all the radian measures where the values are 1?
_−2π, 0, 2π_

c. List all the radian measures where the values are -1?
_π, π_

e. Does this graph represent a sine, cosine, or tangent graph? _COS_

9. Use the graph only to answer the questions.

a. List all the radian measures where the values are 0?
_−2π, −π, 0, π, 2π_

b. List all the radian measures where the values are 1?
_−3π/2, π/2_

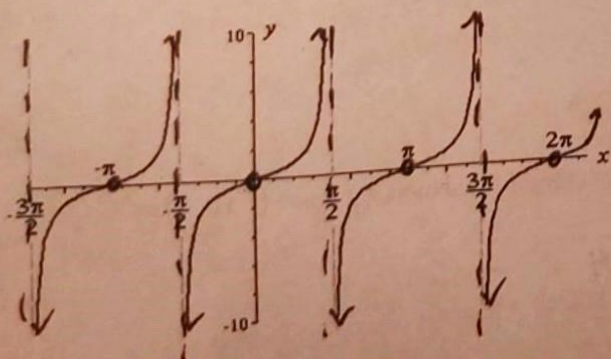c. List all the radian measures where the values are -1?
_−π/2, 3π/2_

e. Does this graph represent a sine, cosine, or tangent graph? _sin_

10. Use the graph only to answer the questions.

a. List all the radian measures where the values are 0?
_−π, 0, π, 2π_

b. List all the radian measures where the asymptotes occur. _3π/2, −π/2, π/2, 3π/2_

c. Does this graph represent a sine, cosine, or tangent graph? _tan_