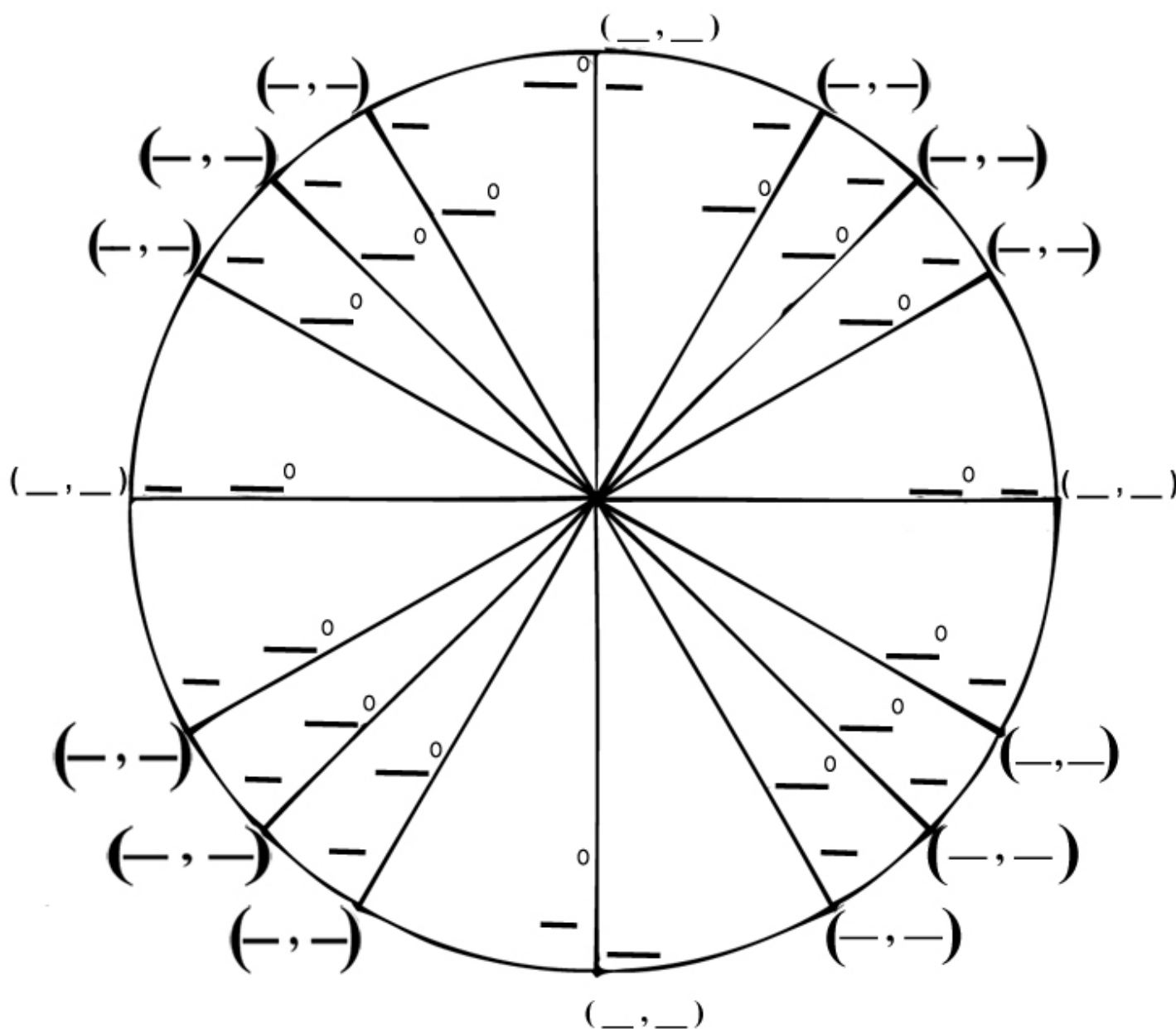


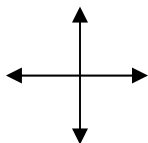
Fill in the first quadrant of the Unit Circle. Each additional quadrant that is filled in correctly will be worth 1 bonus point each. (You are going to need to know various values from all 4 quadrants to complete some of the questions on the remainder of your test.)



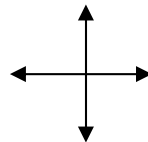
Show all your work. Keep your answers exact – simplified radical form – unless directed otherwise.

1. Sketch each angle in standard position.

a. -290°



b. 4 radians



2. For each angle, state a) the quadrant in which the terminal side lies, b) one *positive* coterminal angle, and c) one *negative* coterminal angle. If angle is in degrees, give answers in degrees. If in radians, give answers in radians.

-30°

a)

b)

c)

$\frac{3\pi}{4}$

a)

b)

c)

4. Evaluate sine, cosine, and tangent for the angle in standard position whose terminal side contains the given point.

a) $(-3, 4)$

$\sin \theta = \underline{\hspace{2cm}}$

$\cos \theta = \underline{\hspace{2cm}}$

$\tan \theta = \underline{\hspace{2cm}}$

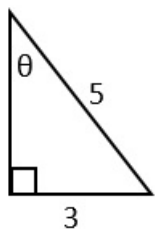
b) $(-2, 3)$

$\sin \theta = \underline{\hspace{2cm}}$

$\cos \theta = \underline{\hspace{2cm}}$

$\tan \theta = \underline{\hspace{2cm}}$

5. Use the triangle to find the exact values of the six trig functions of θ .



$\sin \theta = \underline{\hspace{2cm}}$

$\sec \theta = \underline{\hspace{2cm}}$

$\tan \theta = \underline{\hspace{2cm}}$

$\csc \theta = \underline{\hspace{2cm}}$

$\cot \theta = \underline{\hspace{2cm}}$

$\cos \theta = \underline{\hspace{2cm}}$

6. Suppose θ is an angle in standard position. Under each of the given conditions, in which quadrant does the terminal side lie?

a) $\cos \theta < 0, \tan \theta < 0$

b) $\cos \theta > 0, \sin \theta < 0$

7. Convert the following radian measures to degrees.

8. Convert the following degree measures to radians.
Keep in terms of π .

a) $\frac{\pi}{9}$

b) $\frac{2\pi}{3}$

a) 30°

b) -150°

Evaluate the 3 trig functions for each of the angles in standard position. No decimal approximations.

9. 60°

$\sin \theta = \underline{\hspace{2cm}}$

$\cos \theta = \underline{\hspace{2cm}}$

$\tan \theta = \underline{\hspace{2cm}}$

10. -210°

$\sin \theta = \underline{\hspace{2cm}}$

$\cos \theta = \underline{\hspace{2cm}}$

$\tan \theta = \underline{\hspace{2cm}}$

11. π

$\sin \theta = \underline{\hspace{2cm}}$

$\cos \theta = \underline{\hspace{2cm}}$

$\tan \theta = \underline{\hspace{2cm}}$

13. $\frac{7\pi}{4}$

$\sin \theta = \underline{\hspace{2cm}}$

$\cos \theta = \underline{\hspace{2cm}}$

$\tan \theta = \underline{\hspace{2cm}}$

14. Use trigonometric identities to transform the left side of the equation to the right side. (You want both sides to be equivalent)

$$\cos \theta \sec \theta = 1$$

