Name: _____   PID: _____

> NOTE: You must show the steps necessary to arrive at your answer unless otherwise noted. Use your judgment, if you can't do the entire problem in your head, then you probably should write down at least some intermediate steps.
>
> This assignment has 7 pages. There are 48 total points.

Problem 1 (3 points). Let $\theta = 240°$.

(a) What quadrant is θ in?

(b) What is the reference angle of θ?

(c) What are $\sin(\theta)$ and $\cos(\theta)$?

Problem 2 (3 points). Let $\theta = -210°$.

(a) What quadrant is θ in?

(b) What is the reference angle of θ?

(c) What are $\sin(\theta)$ and $\cos(\theta)$?

Problem 3 (3 points). Let $\theta = -\frac{3\pi}{4}$.

(a) What quadrant is θ in?

(b) What is the reference angle of θ **(in radians)**?

(c) What are $\sin(\theta)$ and $\cos(\theta)$?

Problem 4 (3 points). Let $\theta = \frac{15\pi}{4}$.

(a) What quadrant is θ in?

(b) What is the reference angle of θ **(in radians)**?

(c) What are $\sin(\theta)$ and $\cos(\theta)$?

Problem 5 (4 points). True or False.

_____ Let θ be an angle such that $\sin(\theta) > 0$. It is possible that θ is in the third quadrant.

_____ Let γ be an angle such that $\sin(\gamma) < 0$. It is possible that γ is in the fourth quadrant.

_____ Let β be an angle such that $\cos(\beta) < 0$. It is possible that β is in the fourth quadrant.

_____ Let α be an angle such that $\cos(\alpha) < 0$ and $\sin(\alpha) > 0$. It is possible that α is in the second quadrant.

Problem 6 (4 points). Let α be an angle such that $\sin(\alpha) = \frac{3}{5}$, and α is in the second quadrant. What is $\cos(\alpha)$? *(HINT: recall that $\cos(\theta)^2 + \sin(\theta)^2 = 1$ for any angle θ)*

Problem 7 (6 points). Fill in the coordinate of each point on the unit circle below. **Note: You will be required to do this with no notes on quizzes/exams in the future!**
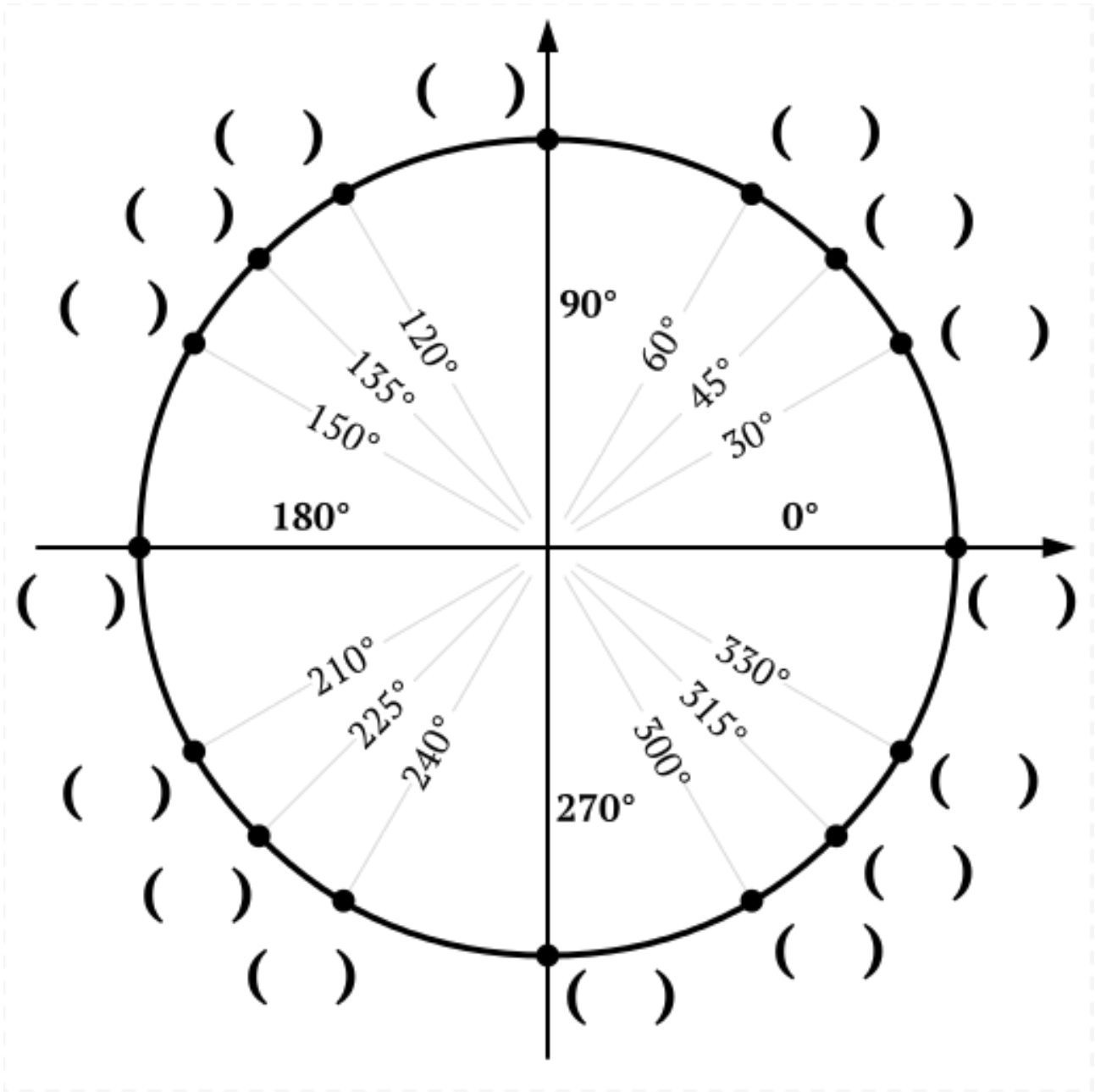
Problem 8 (2 points). Find the coordinates of the point on a circle of radius 6 at an angle of $\frac{\pi}{3}$ radians

Problem 9 (4 points). The point $(-7, -7\sqrt{3})$ lies on the circle of radius 14. At what angle around the circles does this point lie?

Problem 10 (8 points). Compute the following:

(a) $\tan(135°)$

(b) $\csc(\frac{\pi}{6})$

(c) $\cot(\frac{4\pi}{3})$

(d) $\sec(180°)$

Problem 11 (8 points). Simplify the following expressions into a single trig function with no fractions:

(a) $\cot(\theta)\sin(\theta)$

(b) $\sec(\theta)\csc(\theta)$

(c) $\csc(\theta)\cos(\theta)$

(d) $\dfrac{1-\sin(\theta)^2}{\sin(\theta)^2}$

[OPTIONAL]
Survey Questions.
1. Do you find the lectures to go:
   too fast   **too slow**   **roughly the right speed**

2. How do you feel about Midterm 2?
   Not confident   **Somewhat not confident**   **No Idea**   **Somewhat confident**   **Confident**