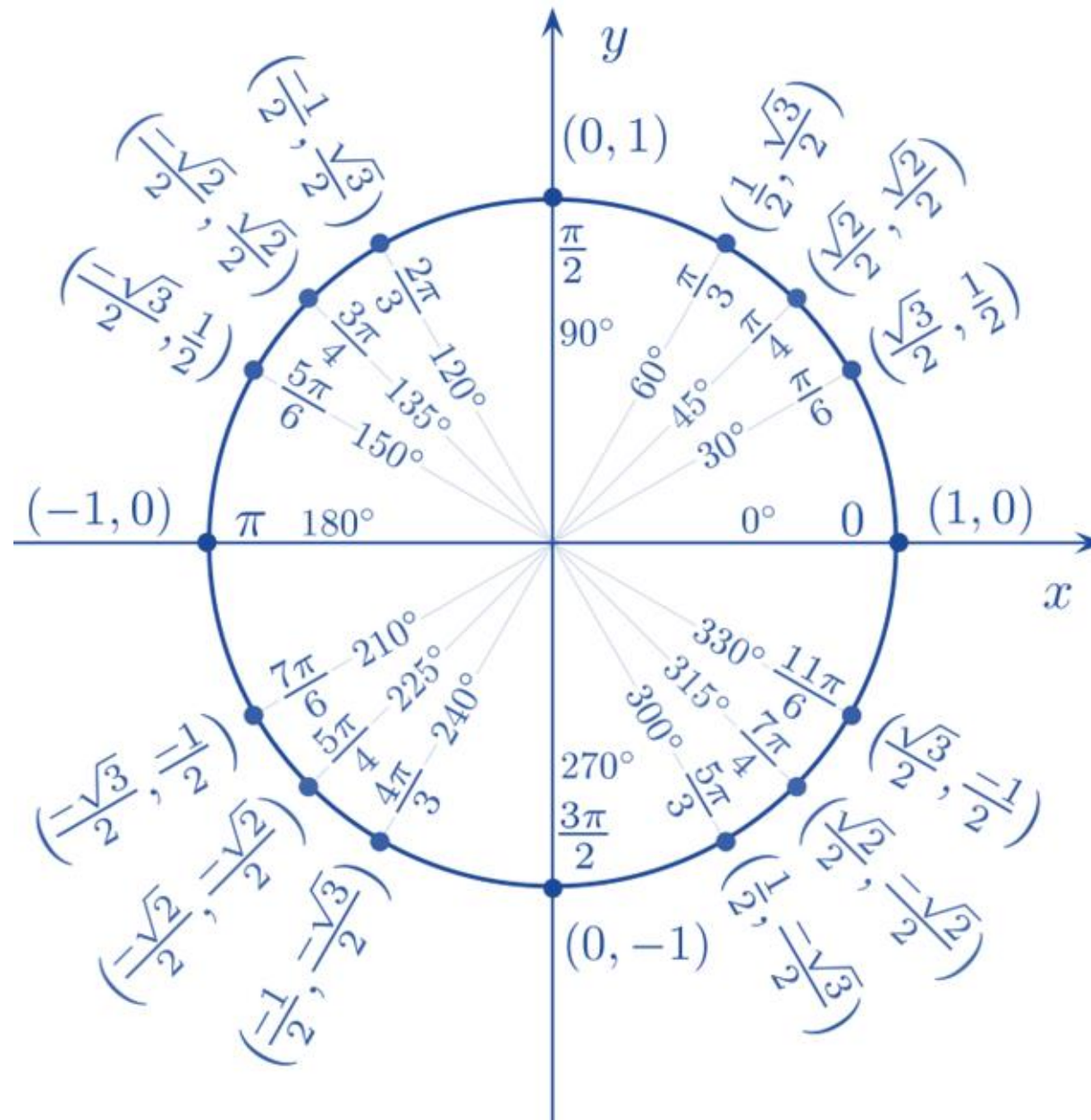


Math 1060 CBE 1 Review

UtahStateUniversity®

Unit Circle



Note: On your own CBE, the unit circle will be blank, and you will have to fill it in yourself.

Problem 1

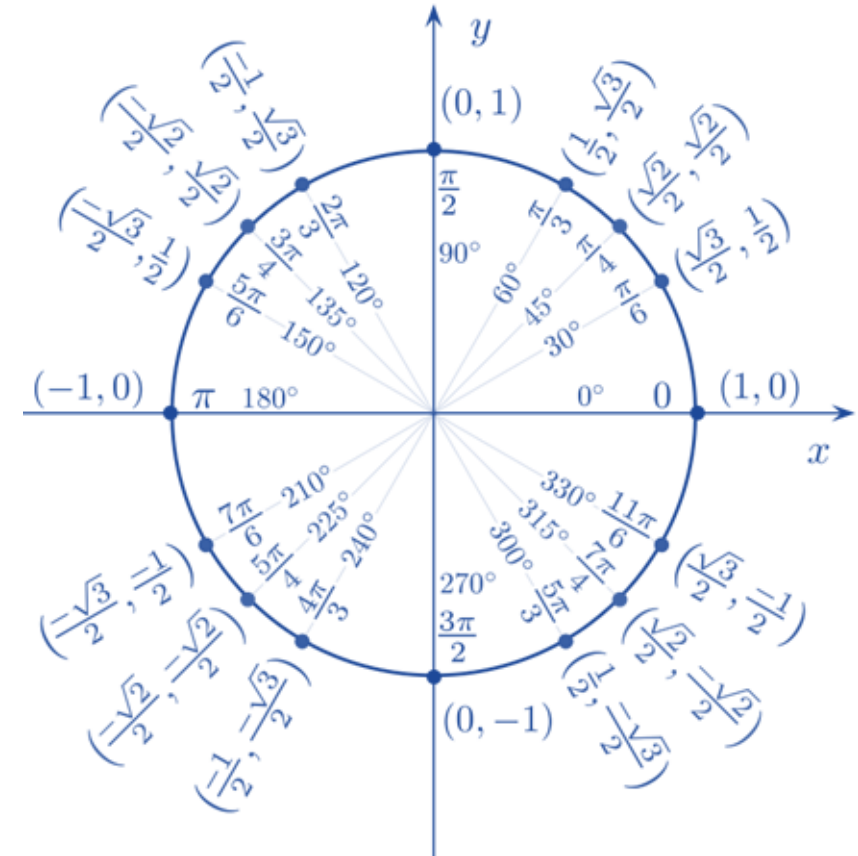
Evaluate the following trigonometric equations

- $\sin\left(\frac{3\pi}{4}\right) =$

- $\cos\left(\frac{-4\pi}{3}\right) =$

- $\tan\left(\frac{11\pi}{6}\right) =$

Solution: $\sqrt{2}/2, -1/2, -\sqrt{3}/3$



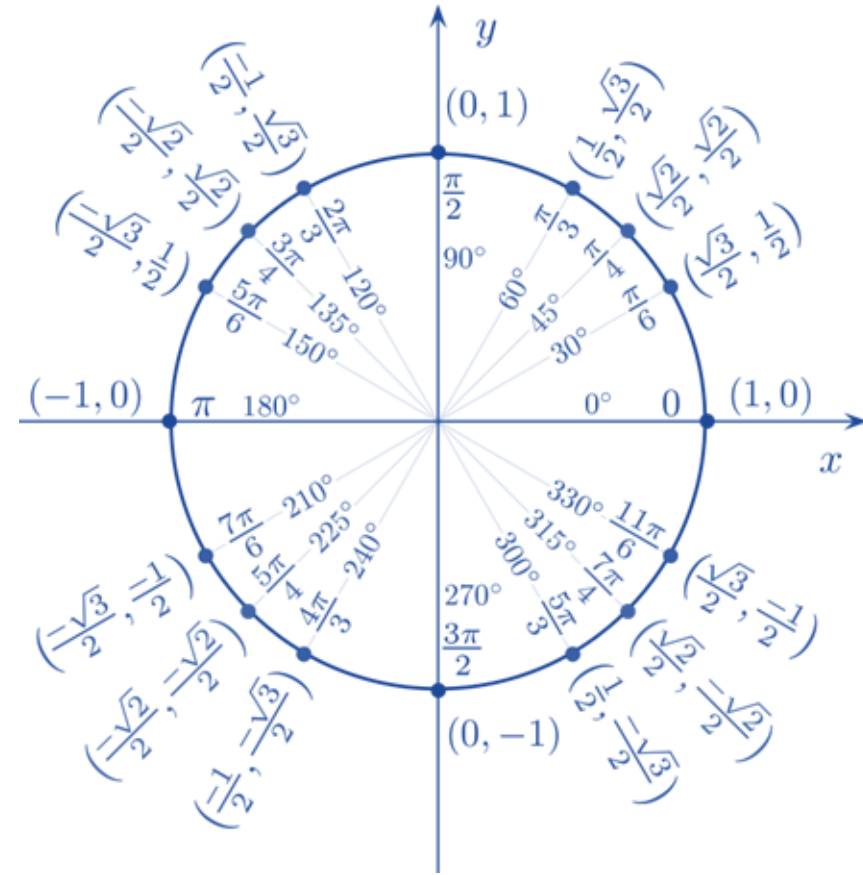
Problem 2

Evaluate the following trigonometric equations

- $\csc\left(\frac{-5\pi}{2}\right) =$

- $\cot(-2\pi) =$

Solution: -1 , DNE



Problem 3

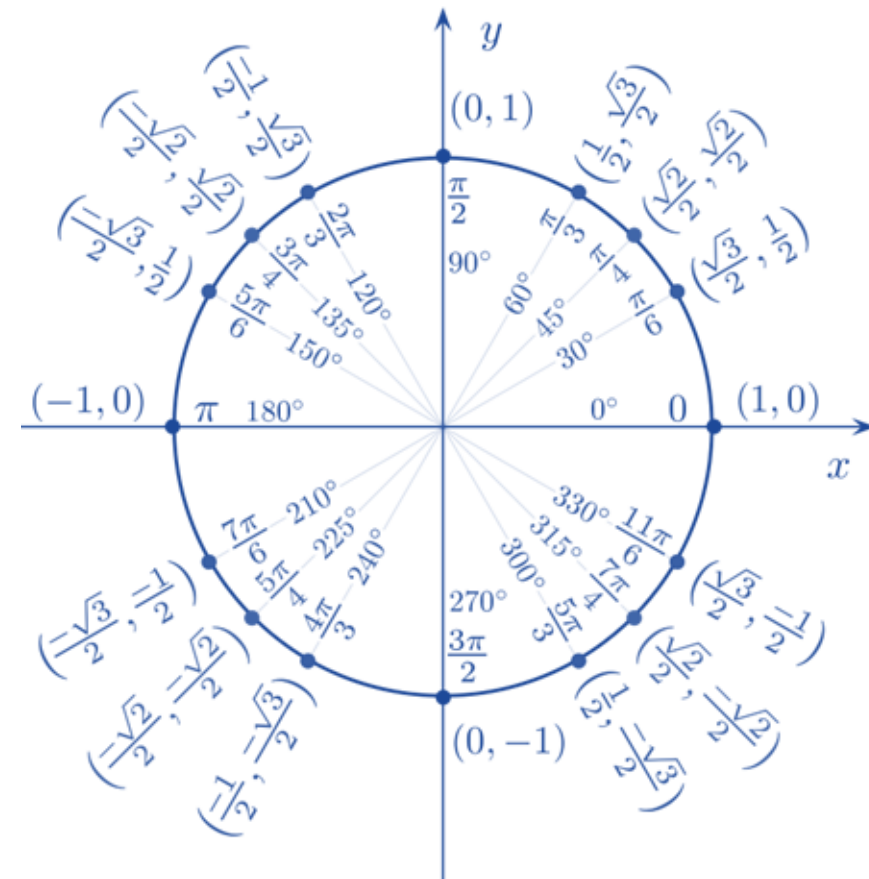
Evaluate the following trigonometric equations

- $\tan^{-1}(0) =$

- $\cos^{-1}\left(\frac{\sqrt{3}}{2}\right) =$

- $\sin^{-1}(-1) =$

Solution: $0, \frac{\pi}{6}, -\frac{\pi}{2}$

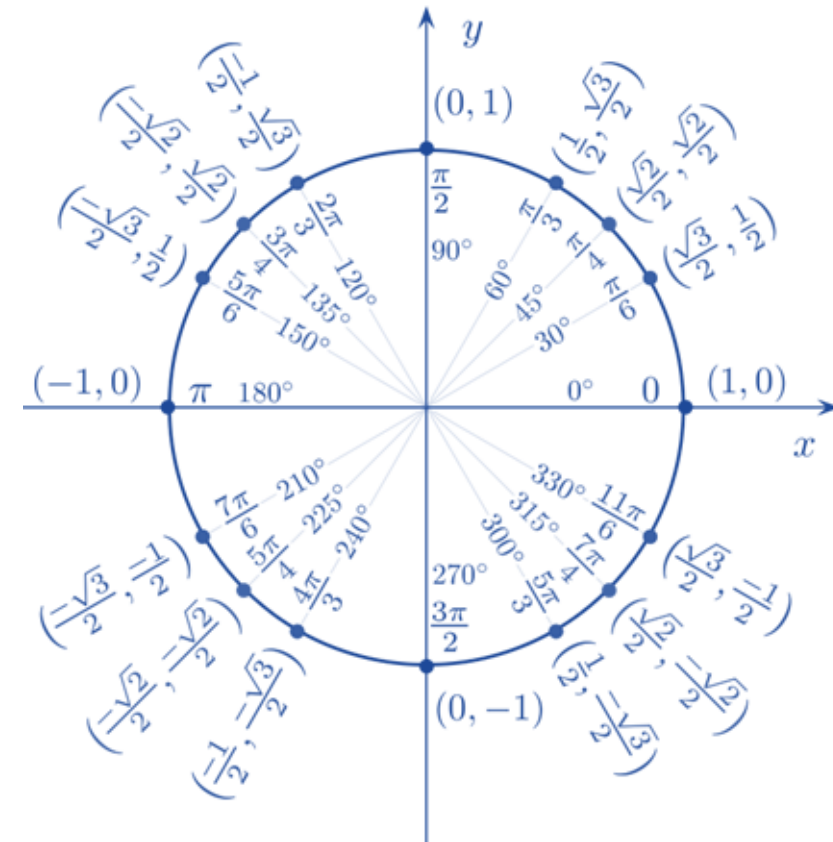


Problem 4

Evaluate the following trigonometric equations

- $\sin\left(\sin^{-1}\left(\frac{5}{6}\right)\right) =$

- $\cos^{-1}\left(\cos\left(\frac{5\pi}{4}\right)\right) =$



Solution: $\frac{5}{6}, \frac{3\pi}{4}$

Problem 5

Evaluate the following trigonometric equation

$$\cot(\cos^{-1}(2x))$$

Solution: $\frac{2x}{\sqrt{1-4x^2}}$

Problem 6 - Part 1

If $\sec(\theta) = \frac{3}{2}$ and $\sin(\theta) < 0$, then determine the exact value of the following trig expression. If the trig function is undefined, type DNE in the answer box.

$$\cot(\theta) =$$

Solution: $\frac{-2}{\sqrt{5}}$

Problem 6 – Part 2

If $\sec(\theta) = \frac{3}{2}$ and $\sin(\theta) < 0$, then determine the exact value of the following trig expressions. If the trig function is undefined, type DNE in the answer box.

$$\csc(\theta) =$$

Solution: $-\frac{3}{\sqrt{5}}$

Problem 7

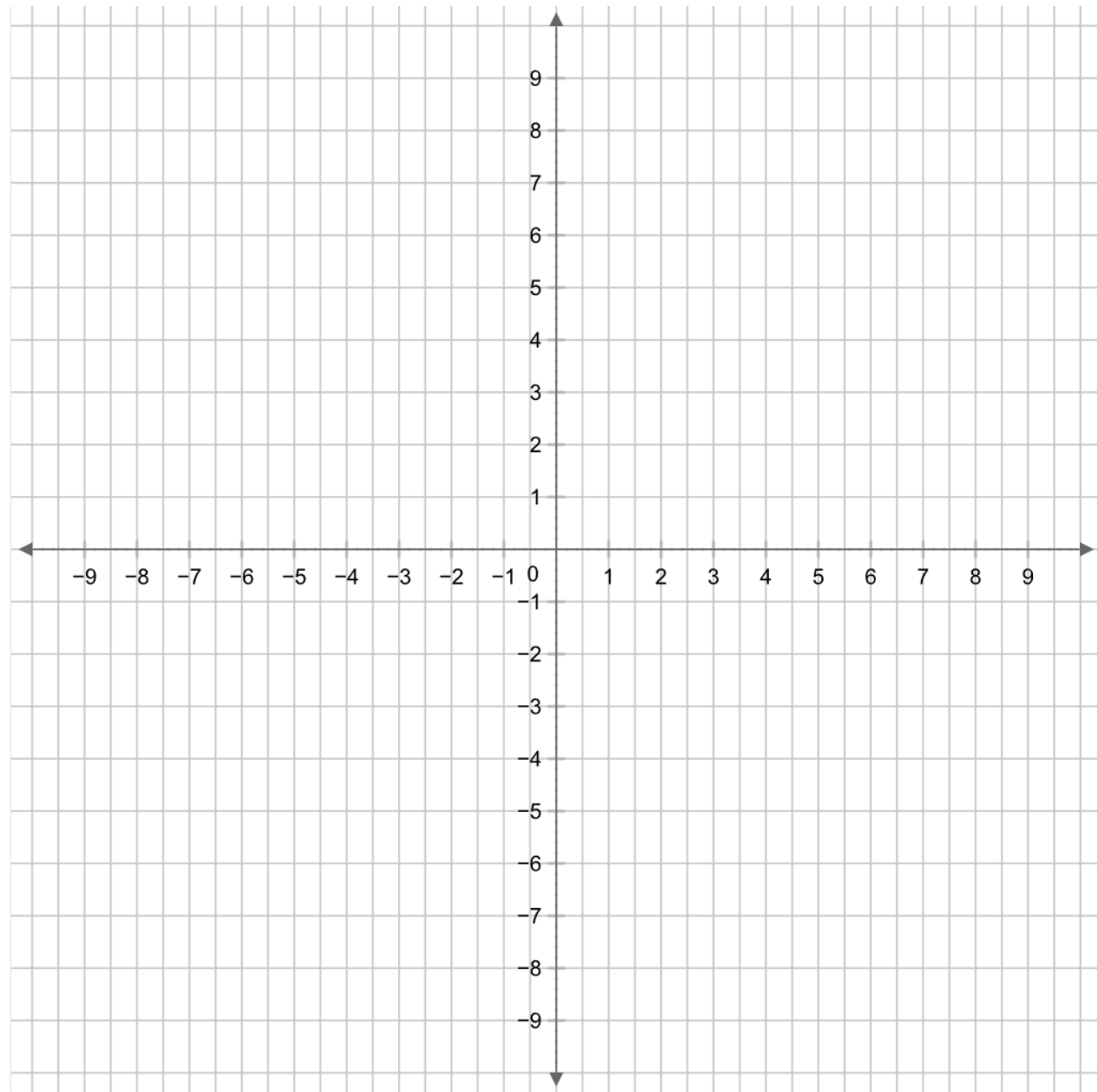
- At a given time, a plane is flying at an elevation of 3300 meters. At the same time, the angle of elevation from a control tower to the plane is measured to be 62 degrees. What is the distance, in meters, between the plane and the control tower at that moment in time? *Round your answer to the nearest whole number.*

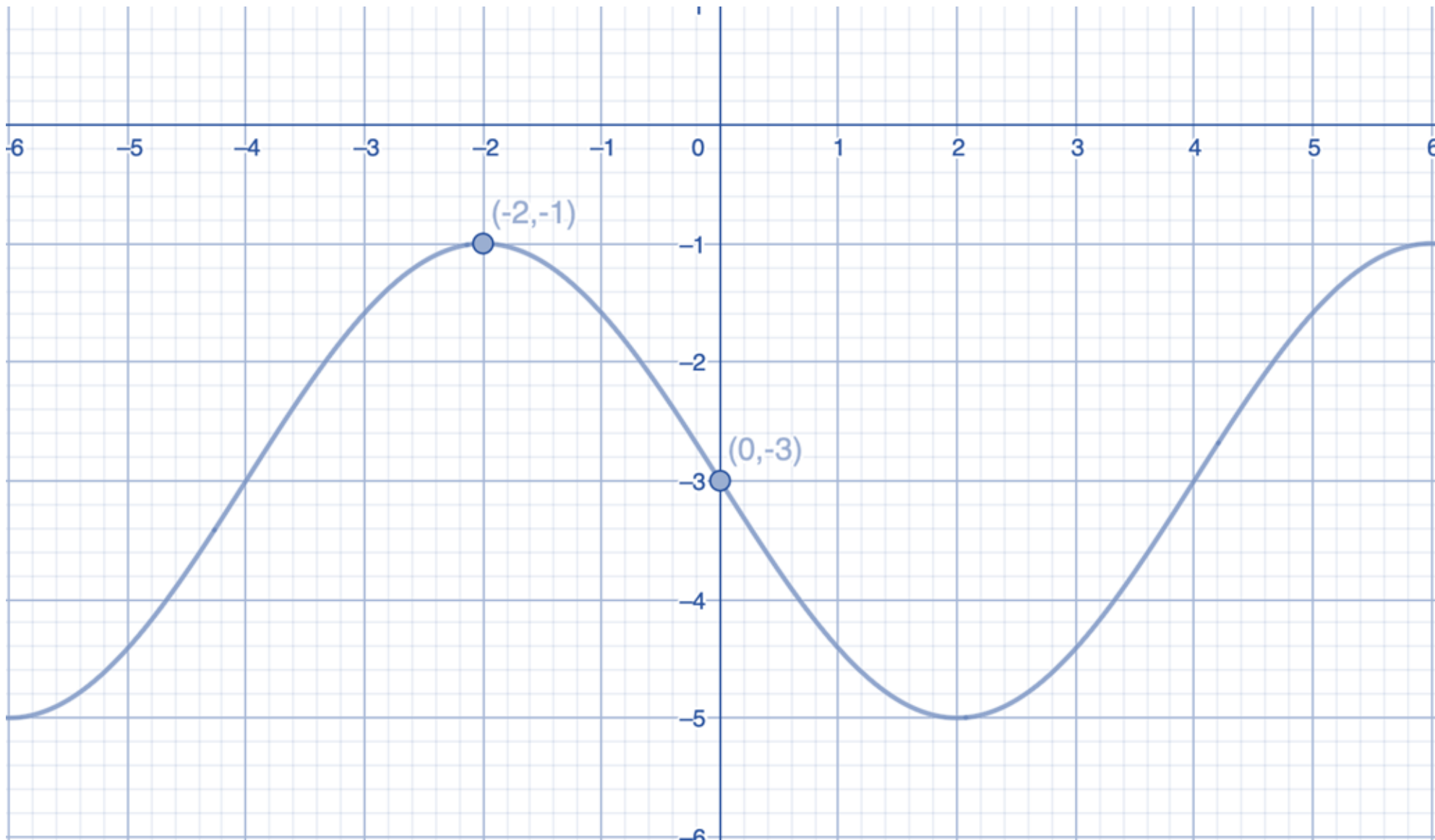
- Solution: 3737

Problem 8

Draw the graph of the function:

$$f(x) = 2 \sin \left(\frac{\pi x}{4} + \pi \right) - 3$$

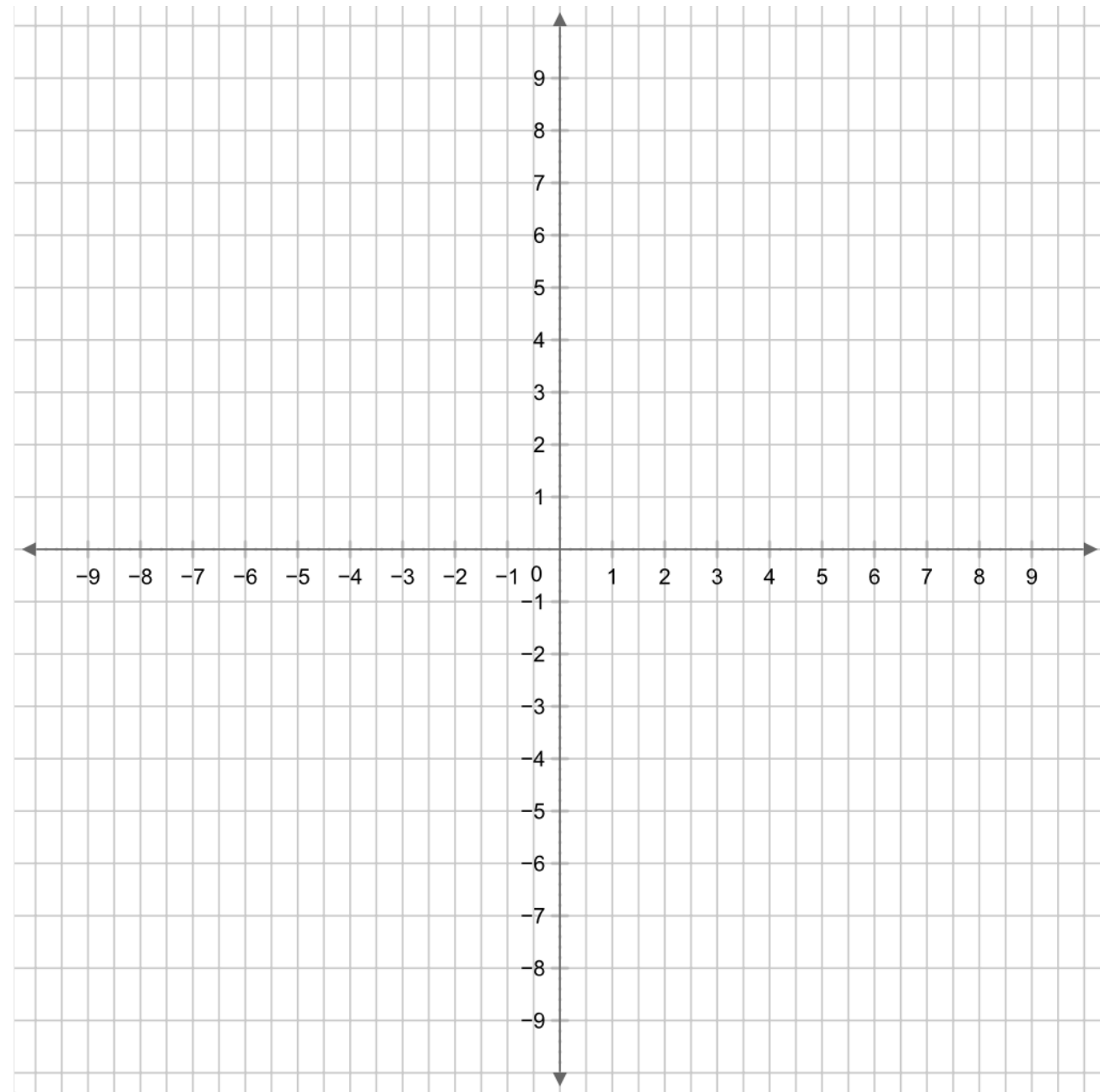


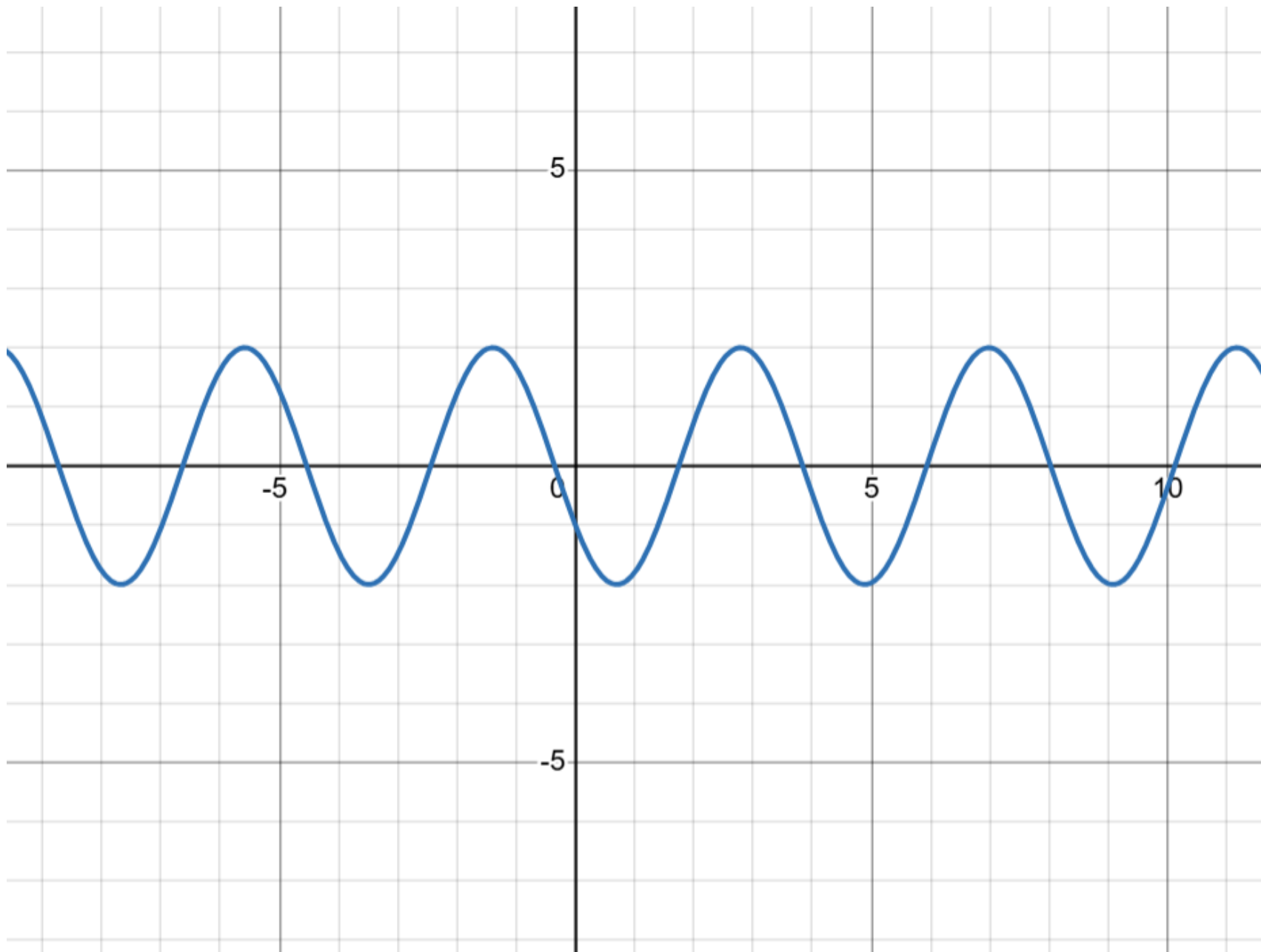


Problem 9 – Part 1

Draw the graph of the function:

$$f(x) = 2\cos\left(\frac{3x}{2} - \frac{4\pi}{3}\right)$$





Problem 9 – Part 2

Using your drawing in Part 1, determine the following:

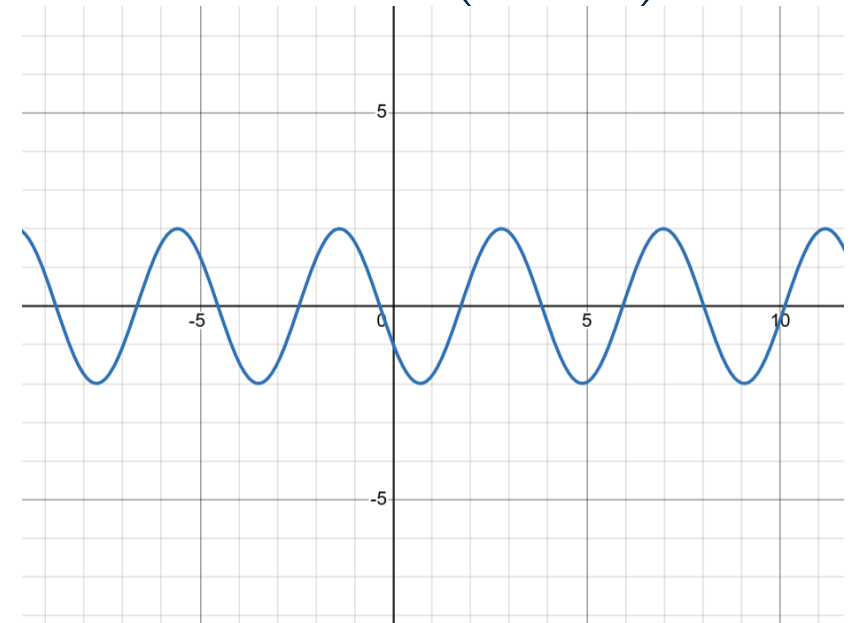
The period:

The direction of the phase shift:

The magnitude of the phase shift:

Number of peaks that occur on the interval:

$$f(x) = 2\cos\left(\frac{3x}{2} - \frac{4\pi}{3}\right)$$

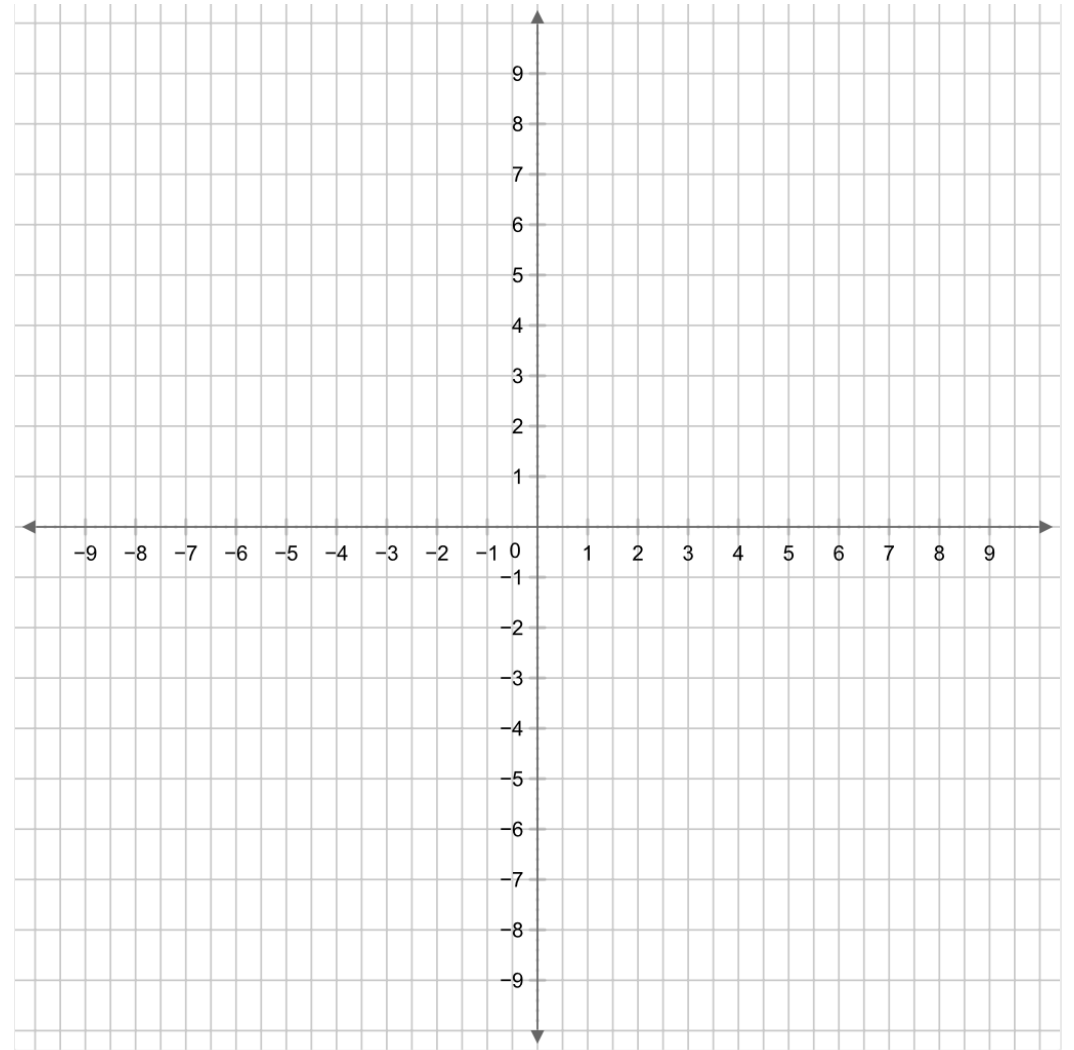


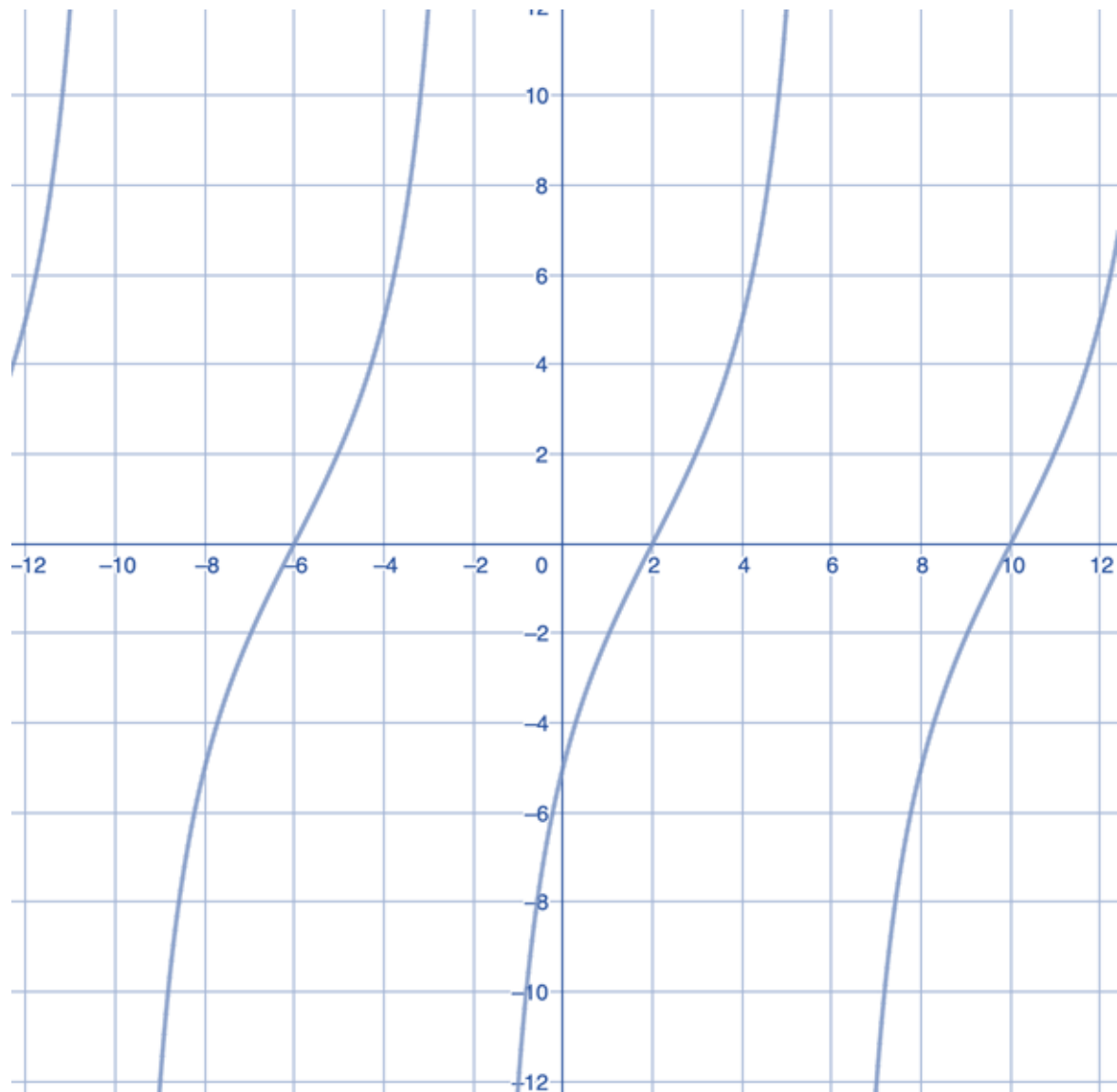
Solution: $\frac{4\pi}{3}$, right, $\frac{8\pi}{9}$, 3

Problem 10 – Part 1

Draw the graph of the function:

$$f(x) = 5\tan\left(\frac{\pi}{8}x - \frac{\pi}{4}\right)$$

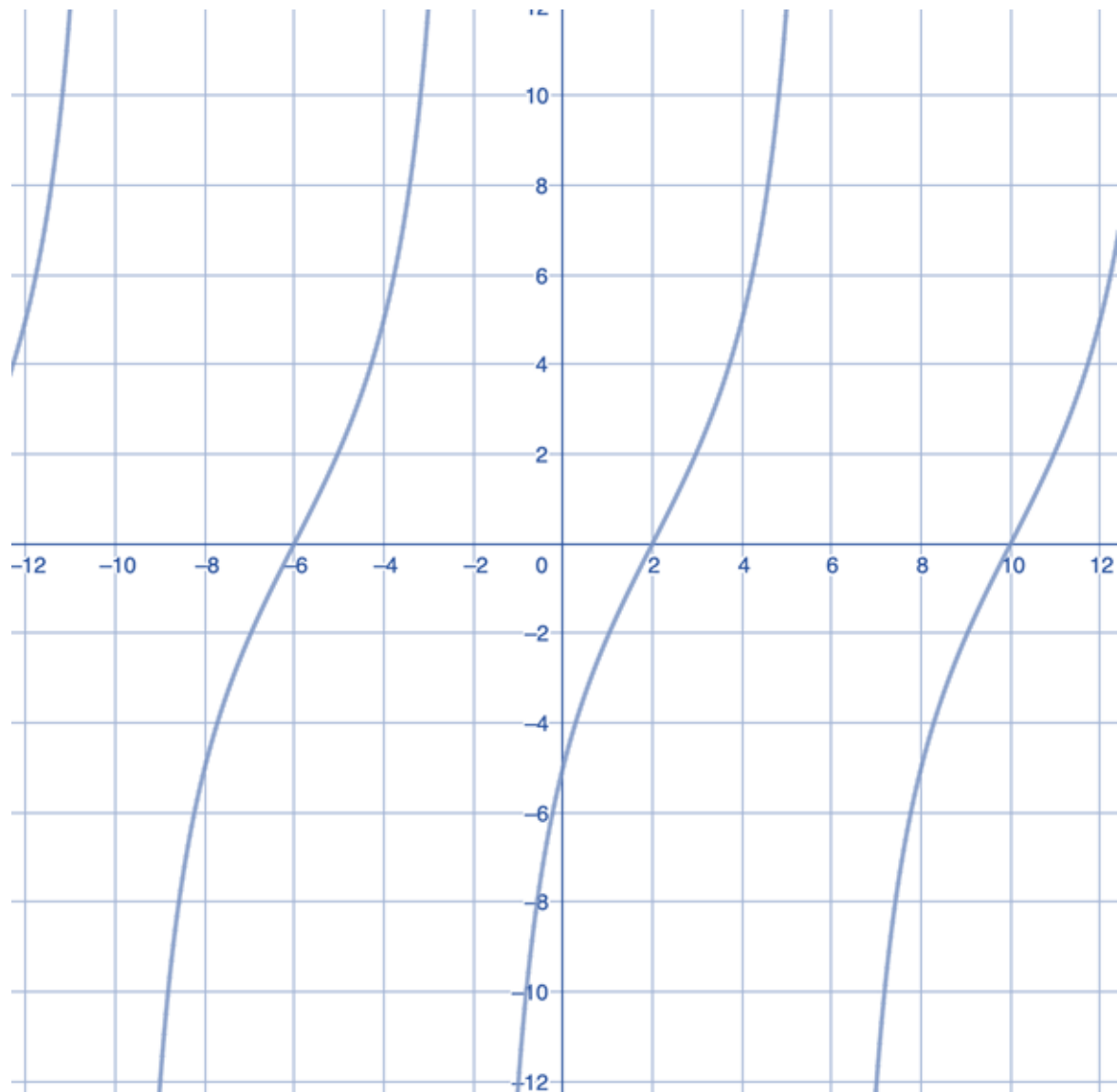




Problem 10 – Part 2

Following drawing the graph plot the following:

- A vertical line wherever the function f has a vertical asymptote on the interval $-10 \leq x \leq 10$.
- A point at every x -intercept of the graph of f that occurs on the interval $-10 \leq x \leq 10$.
- A point at every point with a y -coordinate of 5.
- A point at every point with a y -coordinate of -5 .



Other Resources

Aggie Math Learning Center

- Visit usu.edu/math/amlc for more videos, resources, tutoring times, and recitation leader office hours

