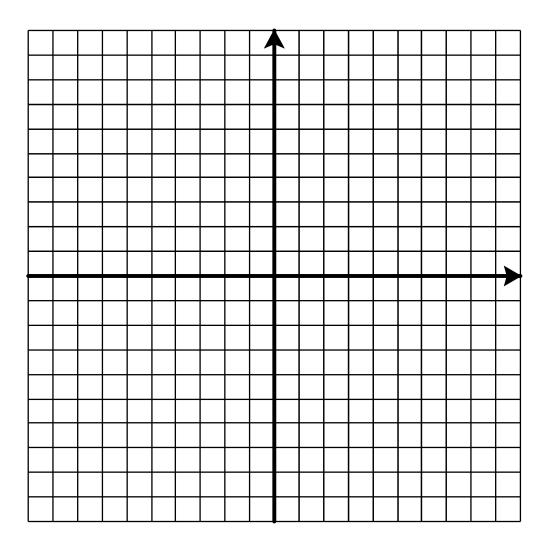
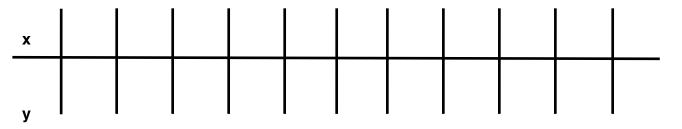
ASSIGNMENT: Graphing Trig Functions

<u>DIRECTIONS</u>: When graphing trig functions, your inputs are usually radians, and the outputs are the desired coordinate on the unit circle. Sine represents the y-coordinate on the unit circle while cosine represents the x-coordinate.

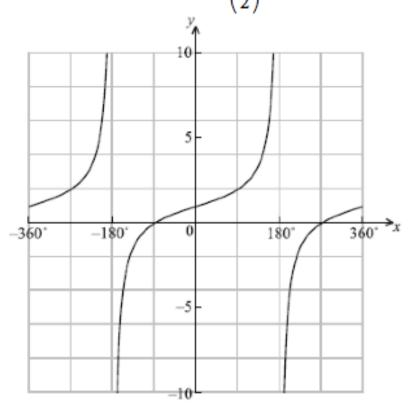
1.) Graph $f(x) = 2 \sin(x)$ along the domain $-2\pi \le x \le 2\pi$.



Create a table with your input and exact output values.



2.) The diagram below shows the graph of $f(x) = 1 + \tan\left(\frac{x}{2}\right) \int for - 360^\circ \le x \le 360^\circ$.



(a) On the same diagram, draw the asymptotes.

- (b) Write down
 - (i) the period of the function;
 - (ii) the value of f(90°).
- (c) Solve f(x) = 0 for $-360^{\circ} \le x \le 360^{\circ}$.
 - 3.)

Consider the function $f(x) = \cos x + \sin x$.

(a) (i) Show that
$$f(-\frac{\pi}{4}) = 0$$
.

(ii) Find in terms of π , the smallest **positive** value of x which satisfies f(x) = 0.

[3 marks]

NAME:

[2 marks]

[2 marks]

[2 marks]

Answer key (ensure you show all calculations. I need to see steps in order to provide the grade you seek.)

1.) At 0 radians, the cosine coordinate on the Unit Circle would be 1. However, we are multiplying the cosine value by 2 in this particular problem.

2.) a) asymptotes are dashed horizontal or vertical lines where a function trends toward infinity

bi) period: ending – beginning x-values that are not repetitious bii) the question is asking, "what is the output value when you input 90° as your x-value?"

c) f(x) stands for "y," so this question is asking, "what x-values make the output value 0?"

3.) ai) input $-\pi/4$ into for both cosine and sine, then add those values. You'll see the answer is 0.

aii) which positive, x-value for radians will make cosine and sine be exact opposites and cancel out to make the output value 0?

a.) What is the amplitude? _____

b.) What is the period? _____