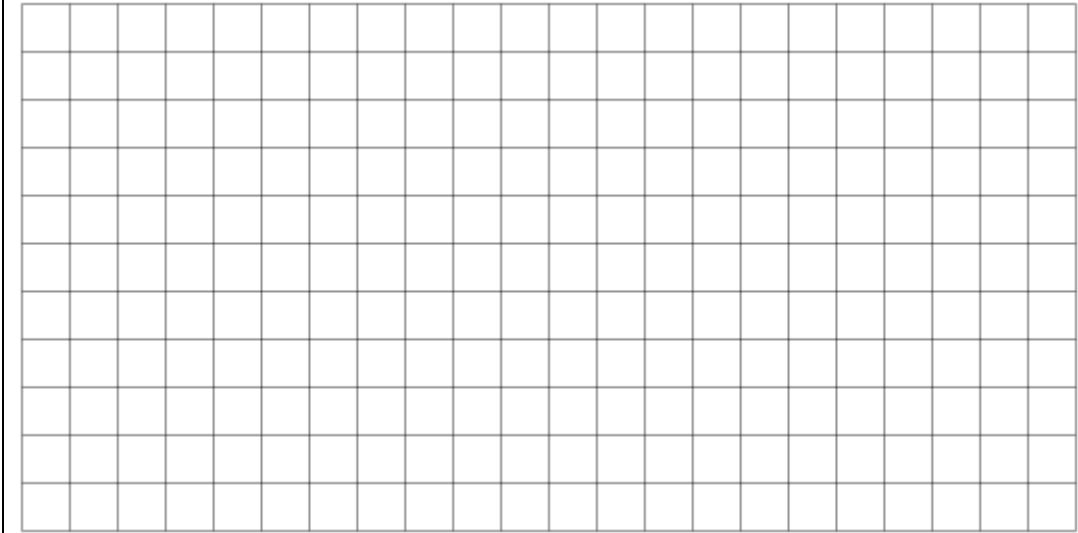


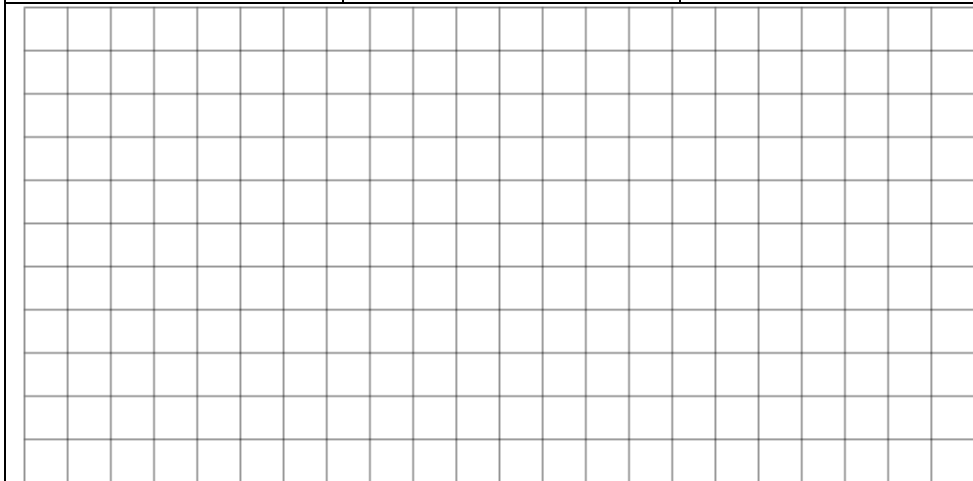
1. Graph two full periods. Fill in the grid below for each one.

- a) $y = -4 \sin(3x) + 1$
- b) $y = 2 \cos(4x) - 5$
- c) $y = 5 \sin\left(\frac{x}{2} - \pi\right) - 2$
- d) $y = -2 \cos\left(4x + \frac{\pi}{2}\right)$
- e) $y = \frac{1}{2} \csc\left(\frac{x}{2}\right)$
- f) $y = -3 \sec\left(\frac{x}{3}\right) + 4$
- g) $y = -4 \csc(4x - \pi) - 2$
- h) $y = 2 \sec\left(\frac{x}{3} - \frac{\pi}{4}\right) + 3$

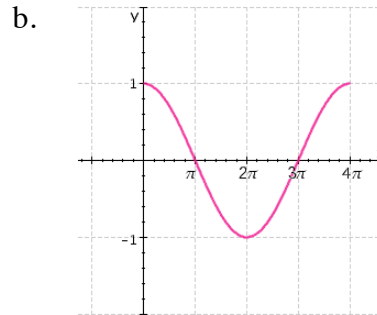
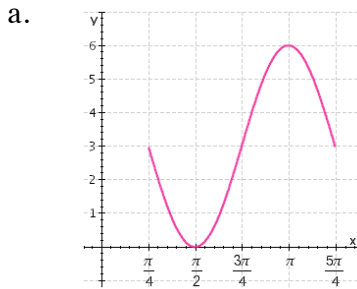
Period:	S.A.:	Domain: Range:
Increment:	Max:	
Start:	min:	
		

2. Graph two full periods. Fill in the grid below for each one.

- a) $y = 2 \tan\left(\frac{1}{2}x\right) - 6$
- b) $y = 3 \cot(2x) + 3$
- c) $y = 4 \tan\left(3x - \frac{\pi}{6}\right) - 1$
- d) $y = \cot\left(\frac{x}{2} - \pi\right)$

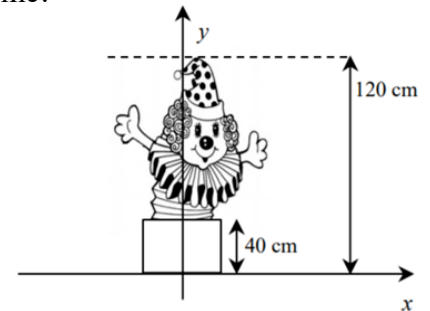
Period:	Middle:	Asymptotes you see: Generalization:
Increment:	High:	
Start:	Low:	
		
Domain:		Range:

3. Find the equation of the graphs below.



4. The paddle wheel of the S.S. Beaver was 13 feet in diameter and revolved 30 times per minute when moving at top speed. Using this speed and starting from a point at the very top of the wheel, write a model for the height h (in feet) of the end of a paddle relative to the water's surface as a function of the time t (in minutes). (Assume the paddle is 2 feet below the water's surface at its lowest point.)

5. The diagram below depicts the head of a Jack-in-a-box used in the display window of a department store. The head is connected to a motor, and its up-and-down movement follows a sinusoidal curve. The head is compressed to 40 cm at $t = 0$ and it reaches a maximum height of 120 cm. It bounces with a frequency of 10 cycles per minute. Write a model for the height of the head as a function of time.



6. Evaluate the following. No Calculator

a. $\tan^{-1}(1)$

b. $\sin^{-1}\left(\frac{\sqrt{3}}{2}\right)$

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

d. $\cos^{-1}(0)$

e. $\tan^{-1}(-\sqrt{3})$

f. $\sin^{-1}(-1)$

7. Evaluate the following.

a. $\tan\left(\sin^{-1}\left(\frac{1}{2}\right)\right)$

b. $\sin(\cos^{-1}(-1))$

c. $\csc\left(\cos^{-1}\left(-\frac{24}{25}\right)\right)$