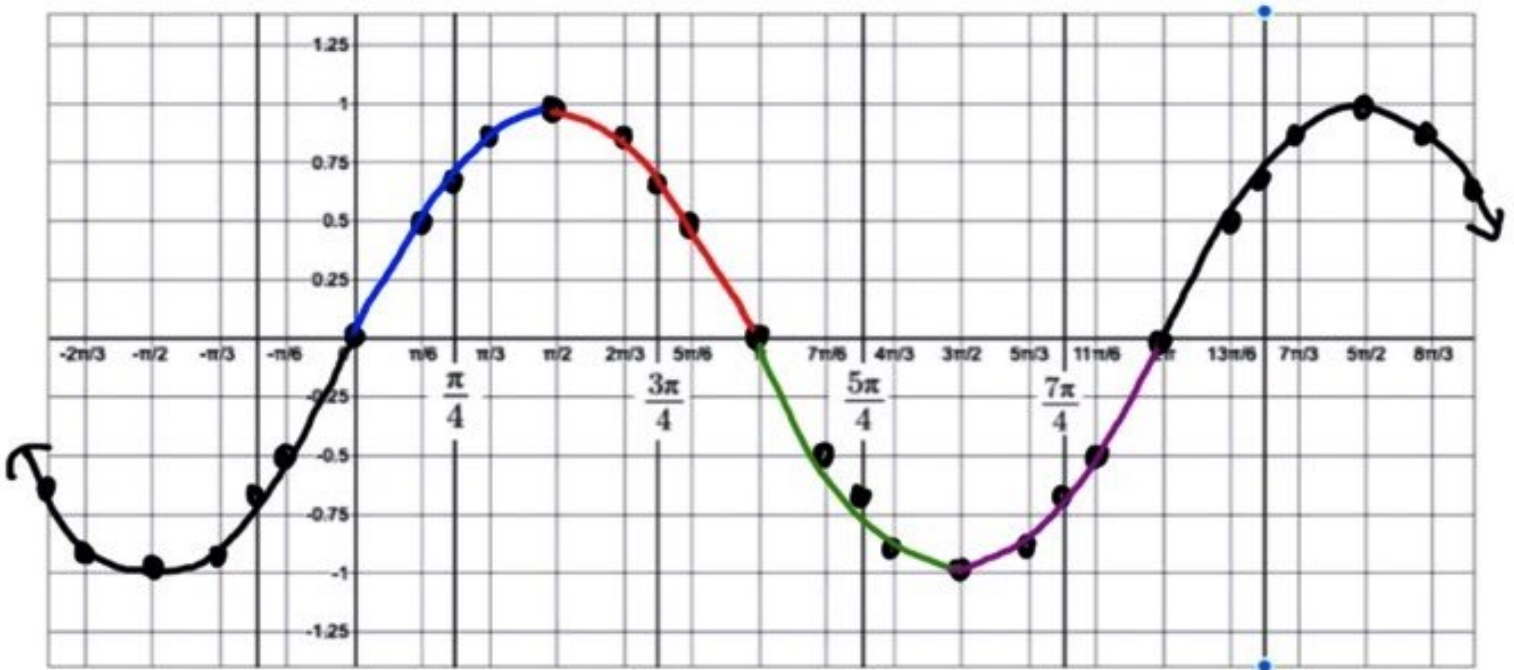


$$f(\theta) = \sin(\theta)$$



Attributes of Sine Graphs in Parent Form

Amplitude: _____

X - intercepts: _____

Period: _____

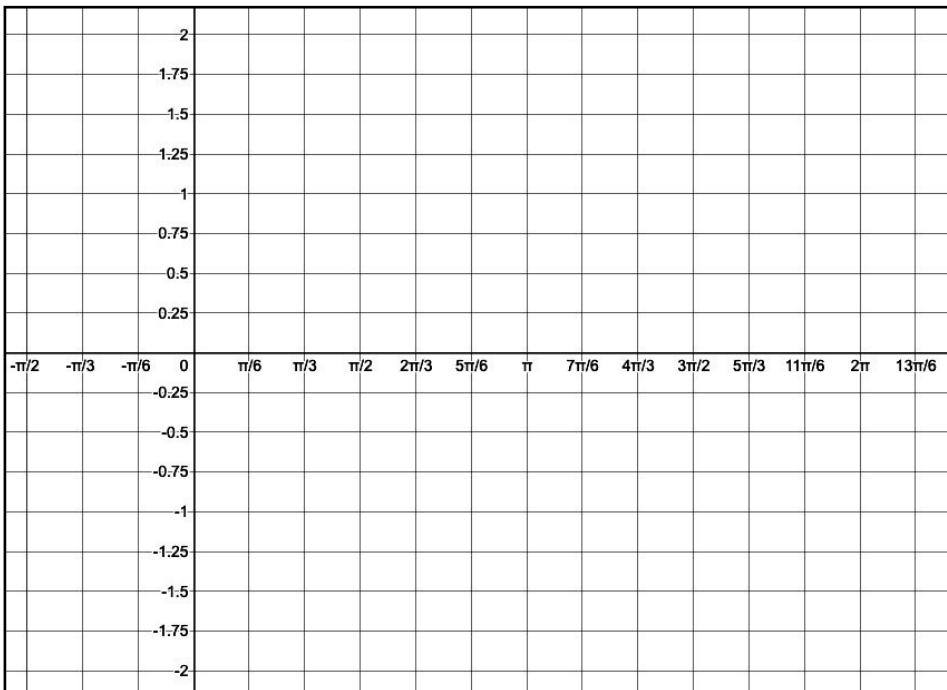
Y - intercepts: _____

Phase Shift: _____

Domain: _____

Vertical Shift: _____

Range: _____



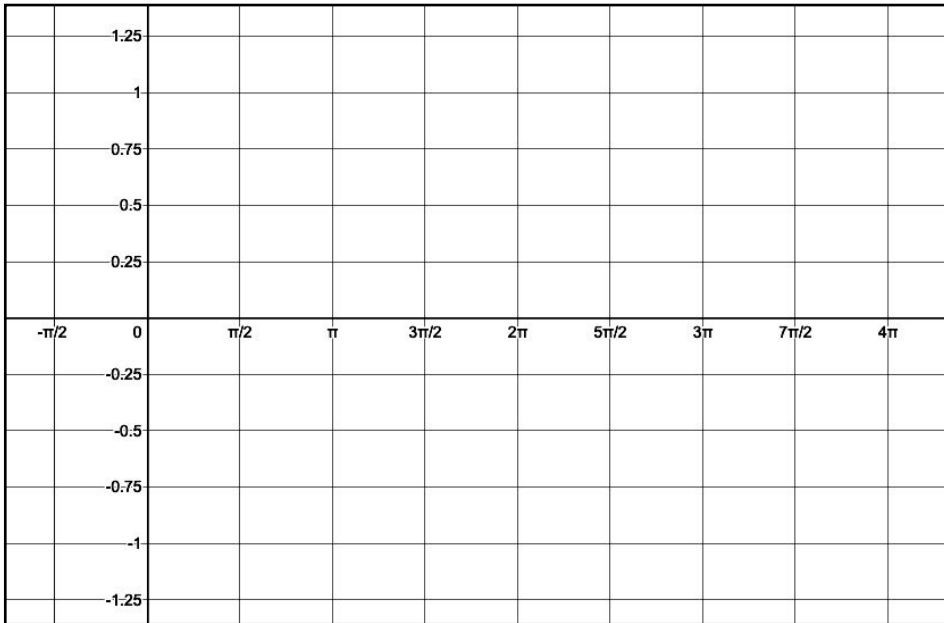
Amplitude: What is it? How to find it. How does it affect the graph?

$$f(x) = A \sin(Bx - C) + D$$

$$\text{amplitude} = |A|$$

$$f(x) = 2 \sin(x)$$

$$f(x) = -\frac{1}{2} \sin(x)$$



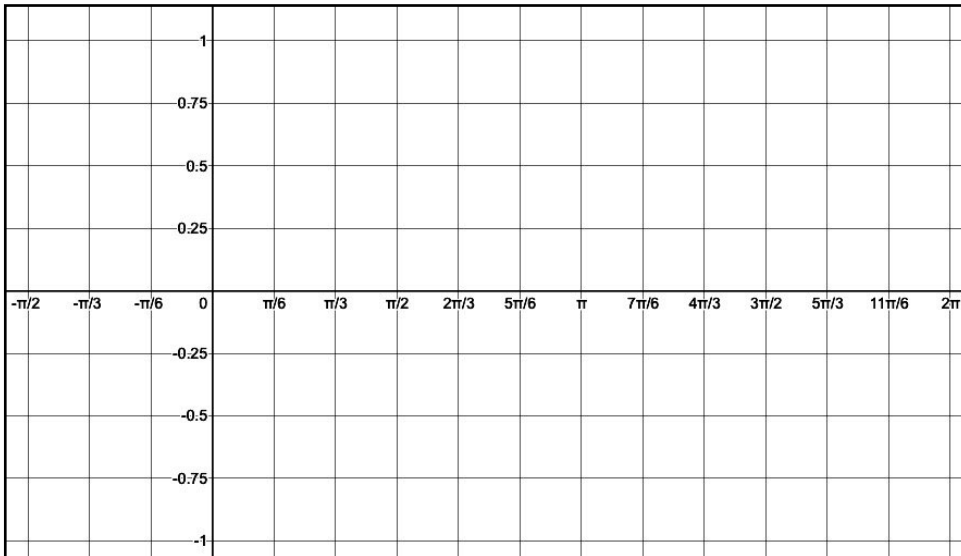
Period: What is it? How to find it.
How does it affect the graph?

$$f(x) = A \sin(Bx - C) + D$$

$$\text{period} = \frac{2\pi}{B}$$

$$f(x) = \sin(2x)$$

$$f(x) = \sin\left(\frac{x}{2}\right)$$



Phase Shift: What is it? How to find it. How does it affect the graph?

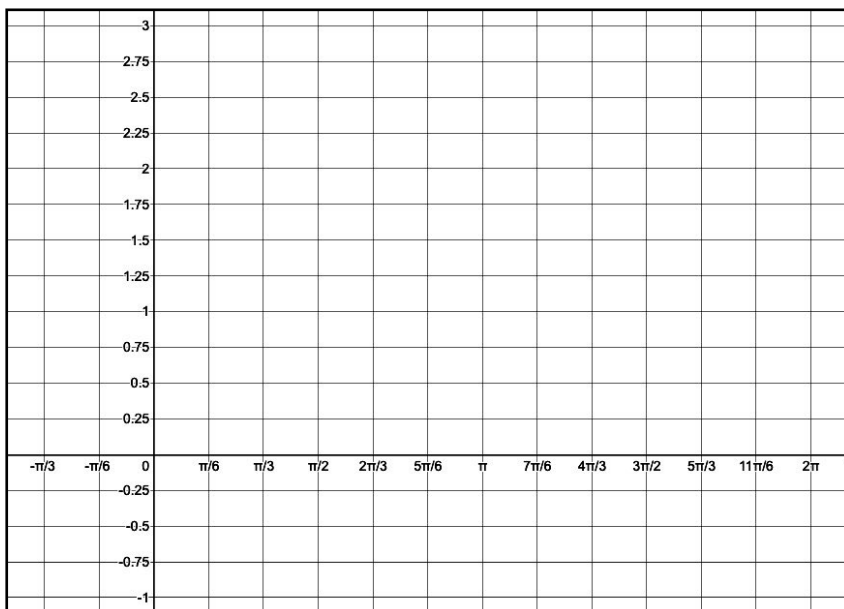
$$f(x) = A \sin(Bx - C) + D$$

$$\text{phase shift} = \frac{C}{B}$$

Graph moves *horizontally left* if C is **Positive**

Graph moves *horizontally right* if C is **Negative**

$$f(x) = \sin\left(x - \frac{\pi}{2}\right) \quad f(x) = \sin\left(x + \frac{\pi}{6}\right)$$



Vertical Shift: What is it? How to find it. How does it affect the graph?

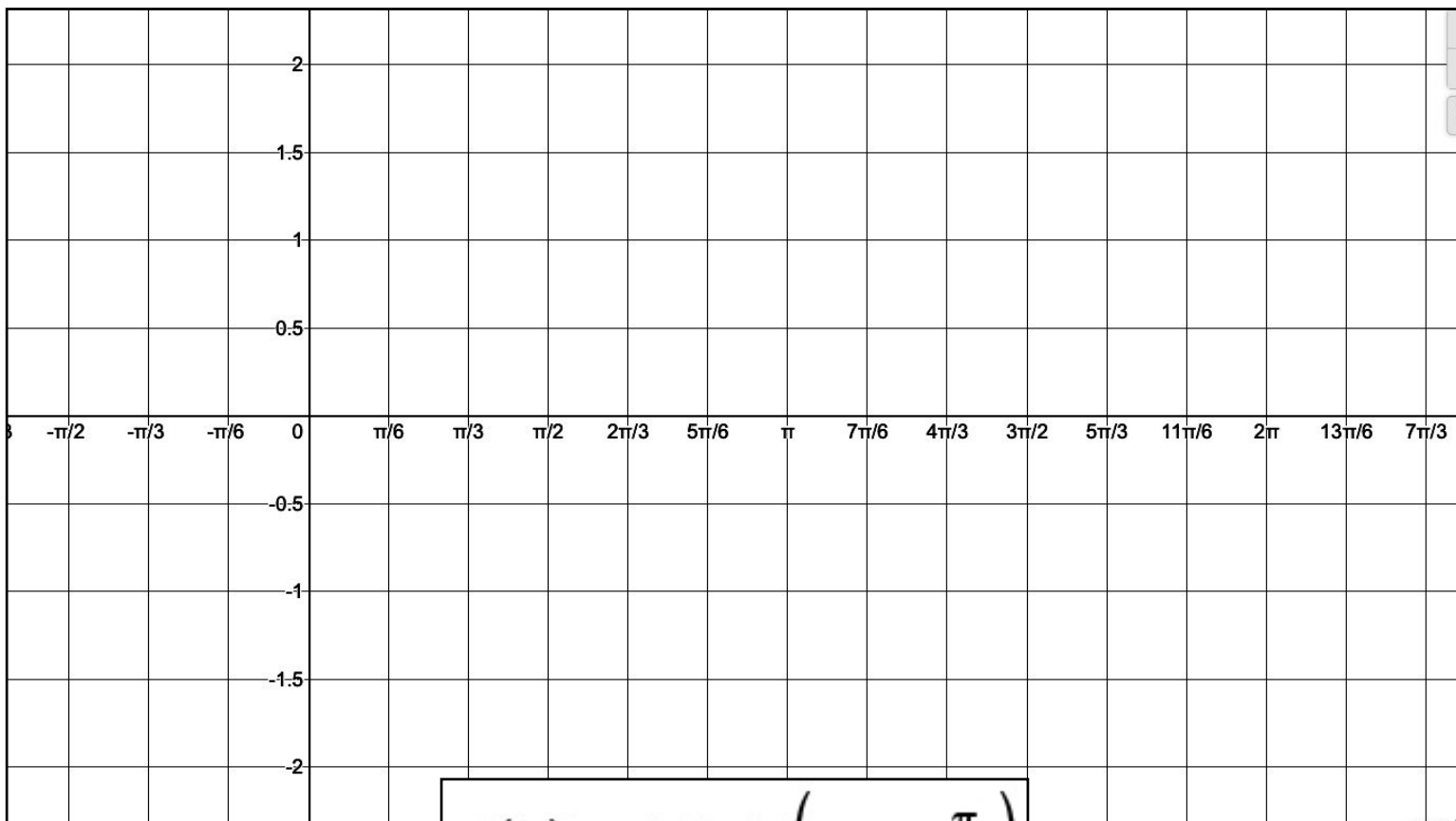
$$f(x) = A \sin(Bx - C) + D$$

$$\text{vertical shift} = D$$

Graph moves *vertically up* if D is **Positive**

Graph moves *vertically down* if D is **Negative**

$$f(x) = \sin(x) + 3$$



$$f(x) = 1.5 \sin\left(2x - \frac{\pi}{3}\right)$$

Amplitude: _____

Period: _____

Phase Shift: _____

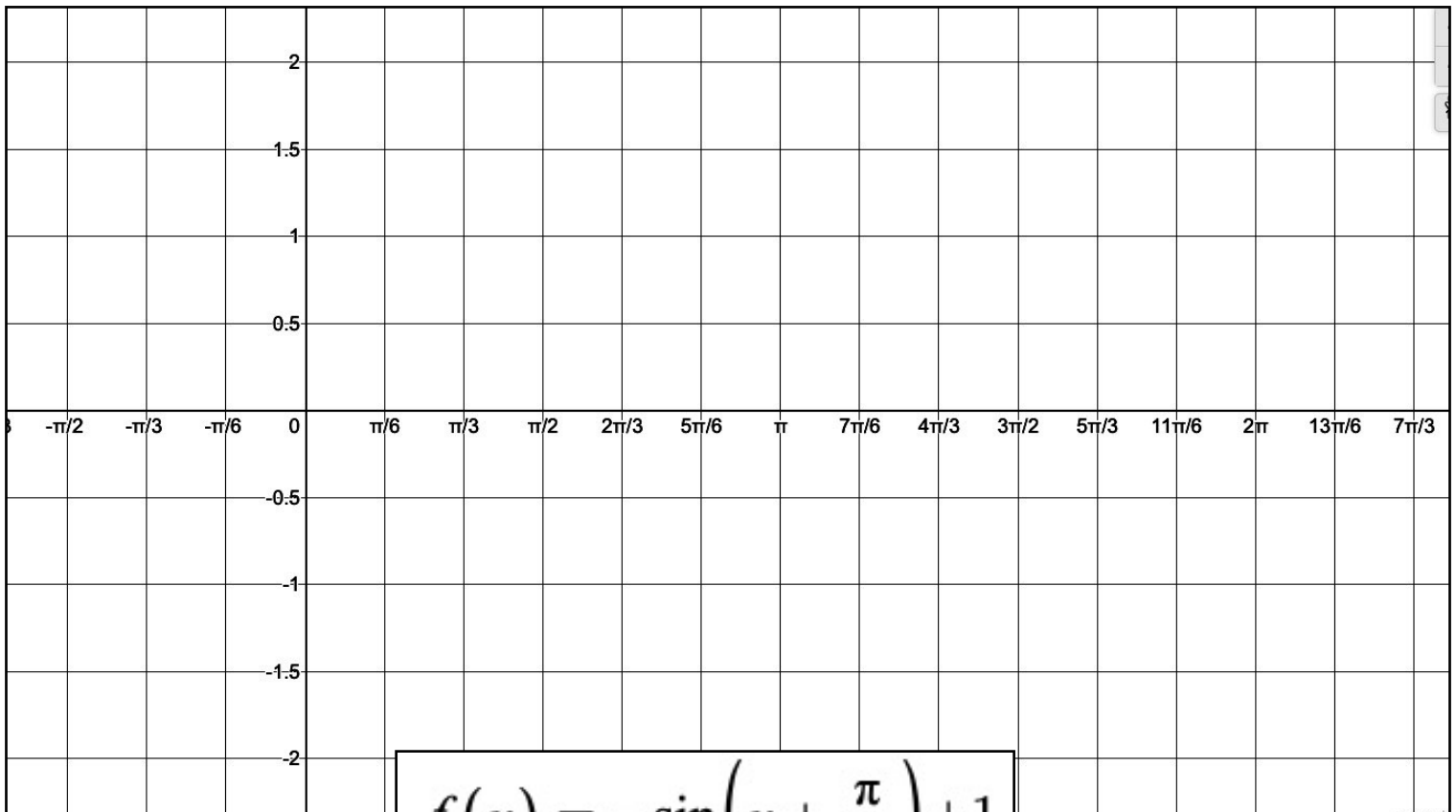
Vertical Shift: _____

X - intercepts: _____

Y - intercepts: _____

Domain: _____

Range: _____



$$f(x) = -\sin\left(x + \frac{\pi}{3}\right) + 1$$

Amplitude: _____

Period: _____

Phase Shift: _____

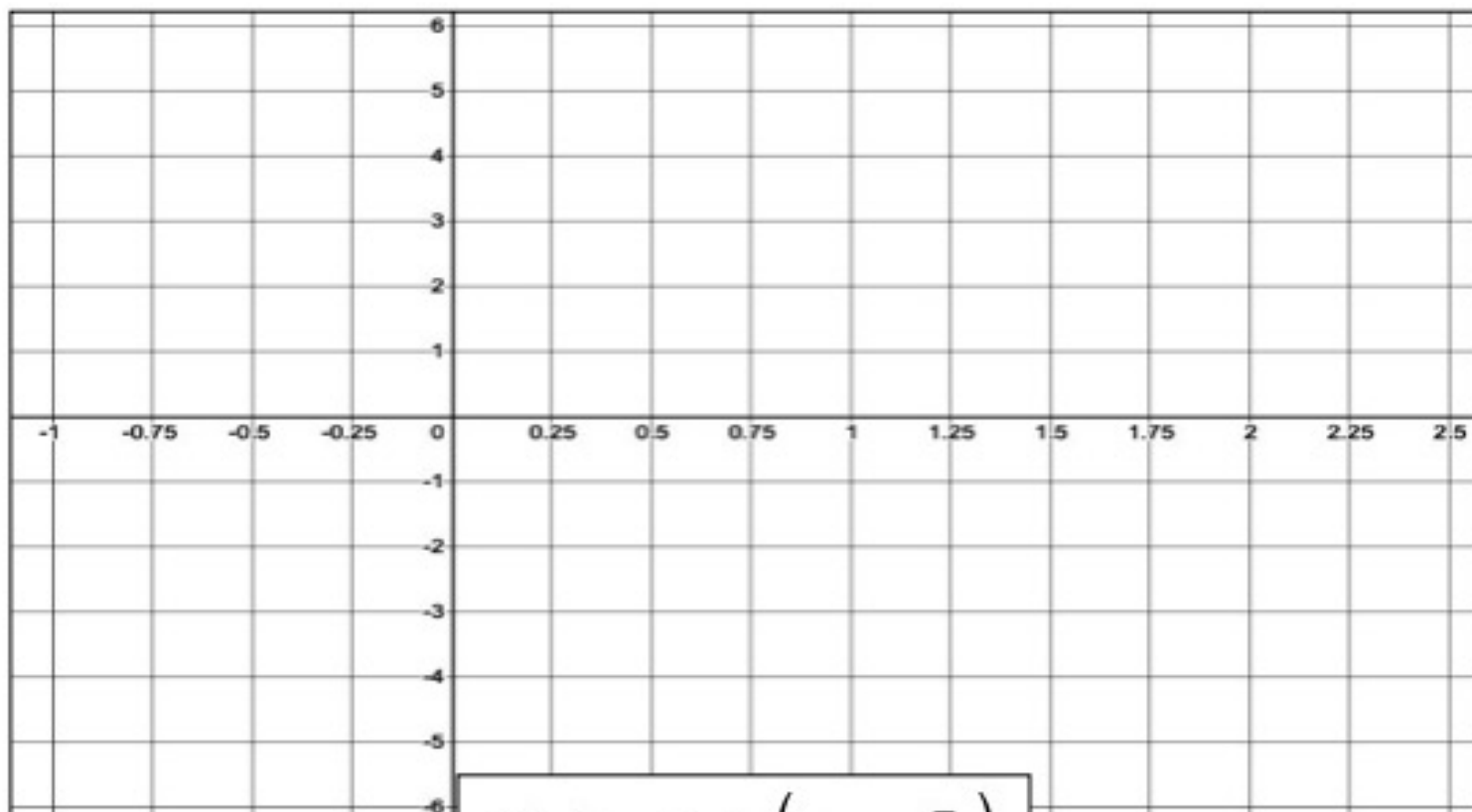
Vertical Shift: _____

X - intercepts: _____

Y - intercepts: _____

Domain: _____

Range: _____



$$f(x) = 5 \sin\left(\pi x + \frac{\pi}{2}\right)$$

Amplitude: _____

Period: _____

Phase Shift: _____

Vertical Shift: _____

X - intercepts: _____

Y - intercepts: _____

Domain: _____

Range: _____

