**5.4 Graphing Trigonometric Functions**

$y=a\sin(b\left(x-c\right)+d)$ or $y=a\cos(b(x-c))+d$

Amplitude: Max:

Period: Min:

Phase shift: Domain:

Vertical displacement: range:

Graph two cycles of each function. Label **5 key points per cycle** and indicate the scale on the x-axis.

1. $y=-3\cos(3\left(x-π\right)+1)$
2. $y=2\sin(\frac{1}{2})\left(x+\frac{π}{4}\right)-2$
3. $y=-\sin(\left(\frac{3}{2}x-\frac{π}{4}\right))+4$
4. $y=-4\sin(\left(2x\right)-3)$



1. $y=3\cos(2(x-\frac{π}{6})$)+2



1. $y=-4\cos(\frac{2}{3})\left(x+\frac{2π}{3}\right)$



1. $y=3\sin(\frac{3}{4})\left(x-\frac{π}{4}\right)+1$



1. $y=-2\cos(\left(\frac{1}{2}x-3π\right))-3$



1. $y=-\cos(\left(\frac{π}{2}x-2π\right))+2$



1. $y=\sin(\left(2πx+8π\right)+3)$

