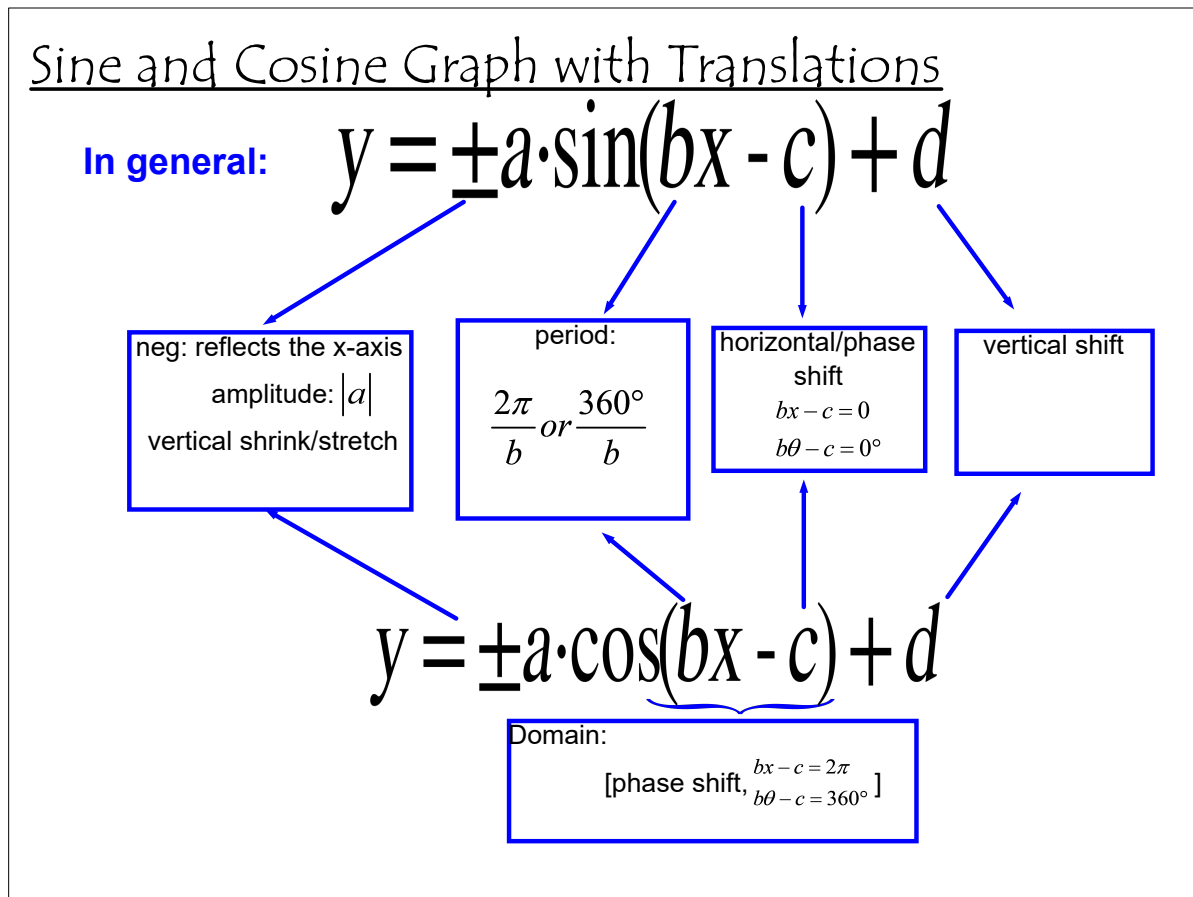


Sine and Cosine Graphs with Translations

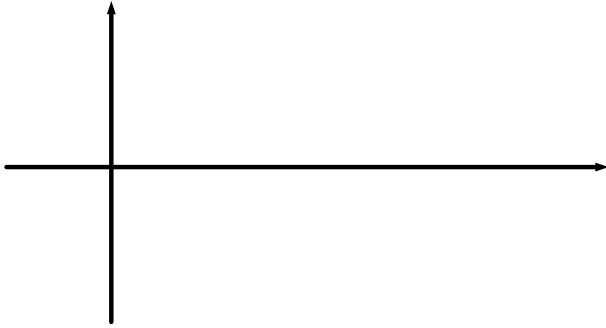


Graphing Prep and Checklist:

- Domain: one phase shift
 - > $b\theta - c = 0^\circ$ and $b\theta - c = 360^\circ$ or
 - > $bx - c = 0$ and $bx - c = 2\pi$
- Vertical Shift: $\pm d$
- Amplitude: $|a|$
- Cosine or Sine with a Reflection?
- Period:
 - > $\frac{360^\circ}{b}$ or $\frac{2\pi}{b}$
 - > Look at domain: right - left
- Phase Shift:
 - > $b\theta - c = 0^\circ$ or $bx - c = 0$
 - > Left side of domain
- Range: Think about amplitude with vertical shift

Sine and Cosine Graphs with Translations

1) $y = -\frac{1}{2}\sin x + 2$



domain:

vertical shift:

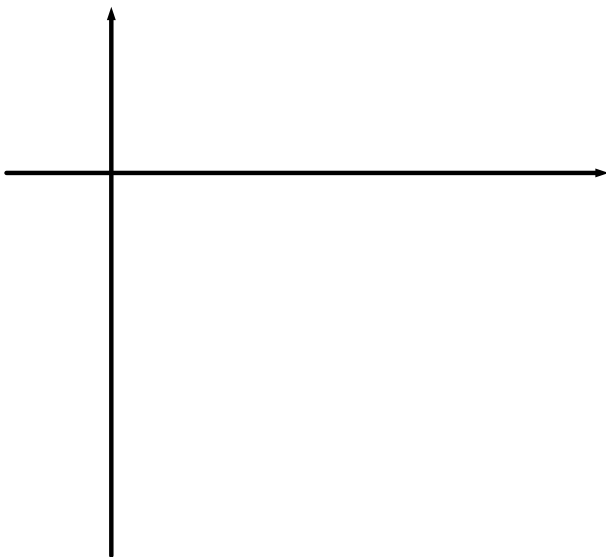
amplitude:

period:

phase shift:

range:

2) $y = 2\sin(3\theta - 270^\circ) - 4$



domain:

vertical shift:

amplitude:

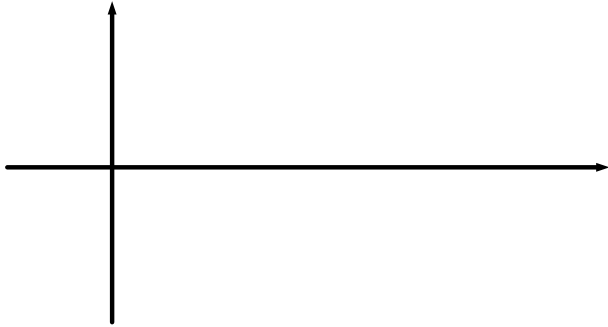
period:

phase shift:

range:

Sine and Cosine Graphs with Translations

3) $y = 3 \cos\left(x + \frac{\pi}{4}\right)$



domain:

vertical shift:

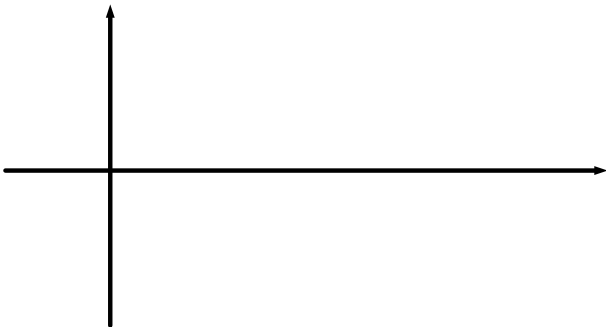
amplitude:

period:

phase shift:

range:

4) $y = 2 - \sin\left(-\frac{\pi X}{4}\right)$



domain:

vertical shift:

amplitude:

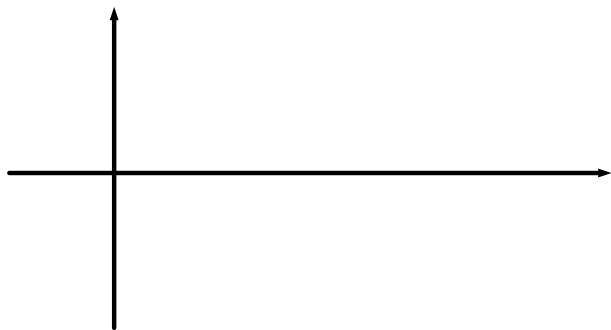
period:

phase shift:

range:

Sine and Cosine Graphs with Translations

5) $y = 1 - 3\cos\theta$



domain:

vertical shift:

amplitude:

period:

phase shift:

range: