# PreCalculus - Graphs of Trig Functions

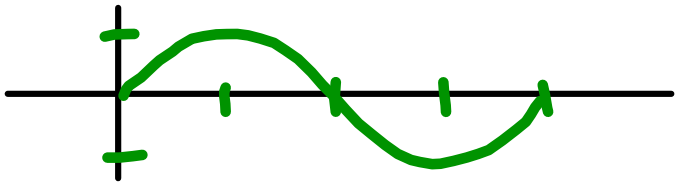
Transformations: $y = \pm a \cdot \sin(bx - c) + d$

- neg: reflects the x-axis
  amplitude: $|a|$
  vertical shrink/stretch
- period: $\frac{2\pi}{b}$ or $\frac{360^\circ}{b}$
- horizontal/phase shift
  $bx - c = 0$
  $b\theta - c = 0^\circ$
- vertical shift

$y = \pm a \cdot \cos(bx - c) + d$

Domain:
[phase shift, $bx - c = 2\pi$ / $b\theta - c = 360^\circ$]

Sine: [0, 2π]



Cosine [0, 2π]