

Graphing Sine and Cosine

Precalculus Honors

The General Form

The equations for sine and cosine transformations are:

$$y = a \sin(b(x - h)) + k$$

$$y = a \cos(b(x - h)) + k$$

Key Components

- ▶ **Amplitude:** $|a|$ (Vertical stretch/compression)
- ▶ **Period:** $\frac{2\pi}{b}$
- ▶ **Phase Shift:** h (Horizontal shift)
- ▶ **Midline:** $y = k$ (Vertical shift)

Quick Check

If $y = 3 \sin(2x)$, what is the period?

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Answer: $\frac{2\pi}{2} = \pi$