

4.4 Graphing

$$y = \sin x$$

$$D: (-\infty, \infty)$$

$$R: [-1, 1]$$

$$y = \overset{\text{amplitude}}{\underline{3}} \sin x$$

$$R: [-3, 3]$$

amplitude: always positive!
measures spread from center

$$y = \frac{1}{2} \sin x$$

$$\text{amp: } \frac{1}{2}$$

$$\rightarrow R: \left[-\frac{1}{2}, \frac{1}{2}\right]$$

$$y = -2 \sin x$$

$$\text{amp: } 2$$

$$R: [-2, 2]$$

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periodic: pattern repeats

period: how long it takes for the pattern to repeat

$$y = |\sin x|$$

$$\text{amp: } R: [-1, 1]$$

$$\text{Period: } 2\pi$$

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Standard form of a sinusoid:

$$f(x) = \underline{a} \overset{\text{cos}}{\sin} \left[\underline{b}(x - \underline{c}) \right] + \underline{d}$$

- a: amplitude
- b: periodic finder
- c: phase shift
- d: vertical shift

period: $\frac{2\pi}{|b|}$

frequency: $\frac{|b|}{2\pi}$

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$$y = |\sin x|$$

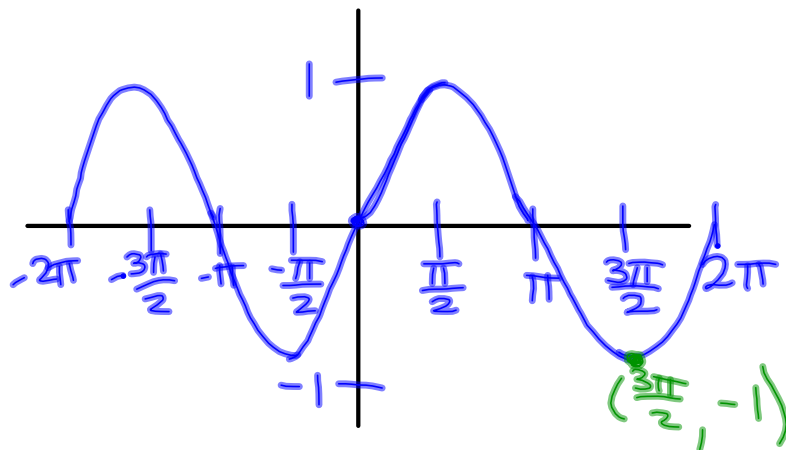
a: 1

b: 1

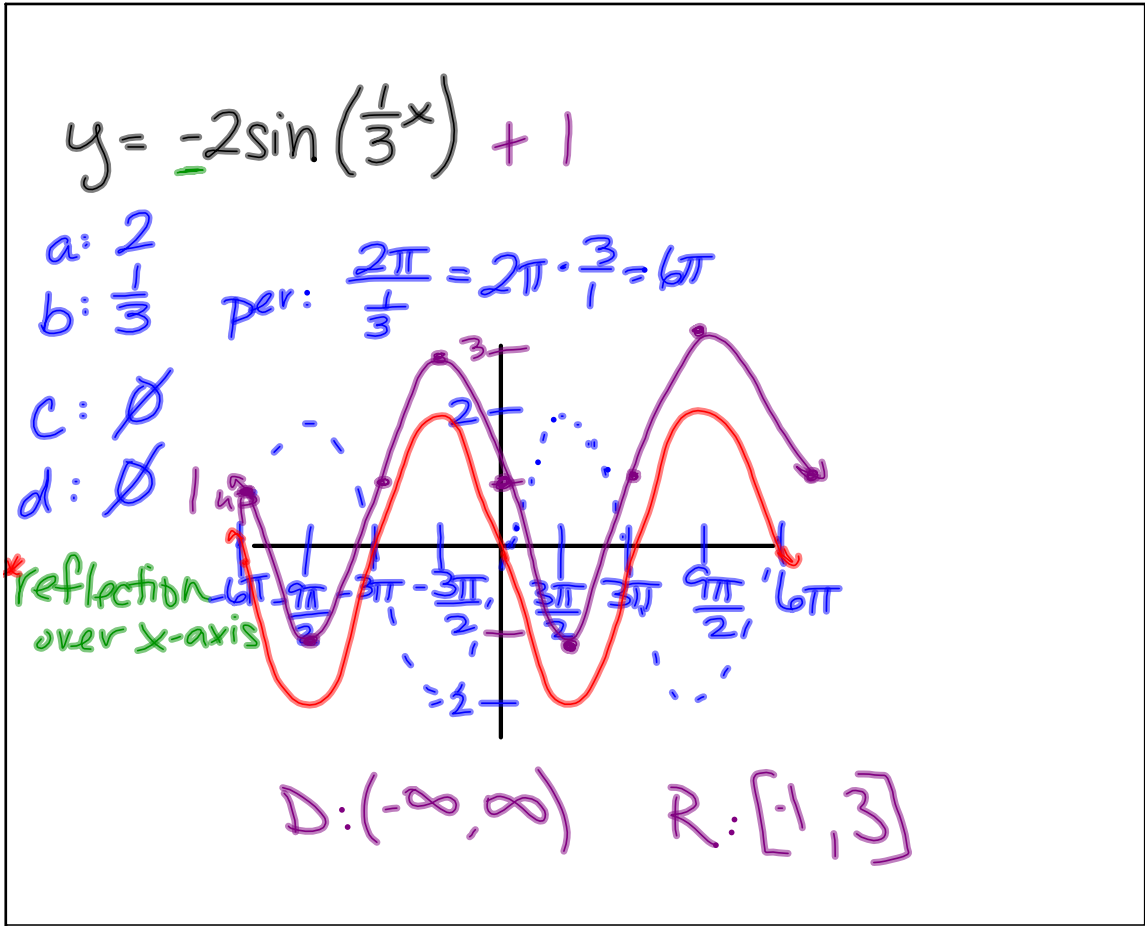
c: \emptyset

d: \emptyset

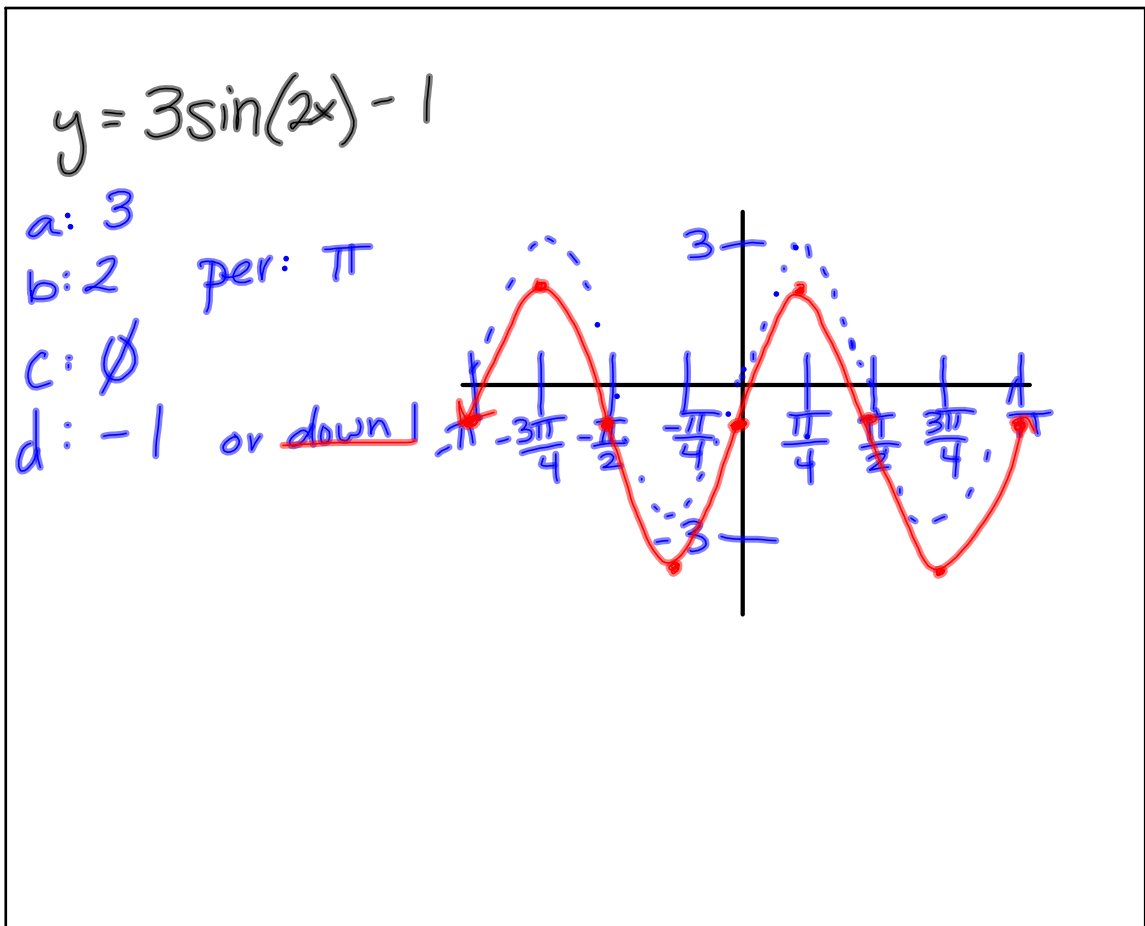
per: 2π



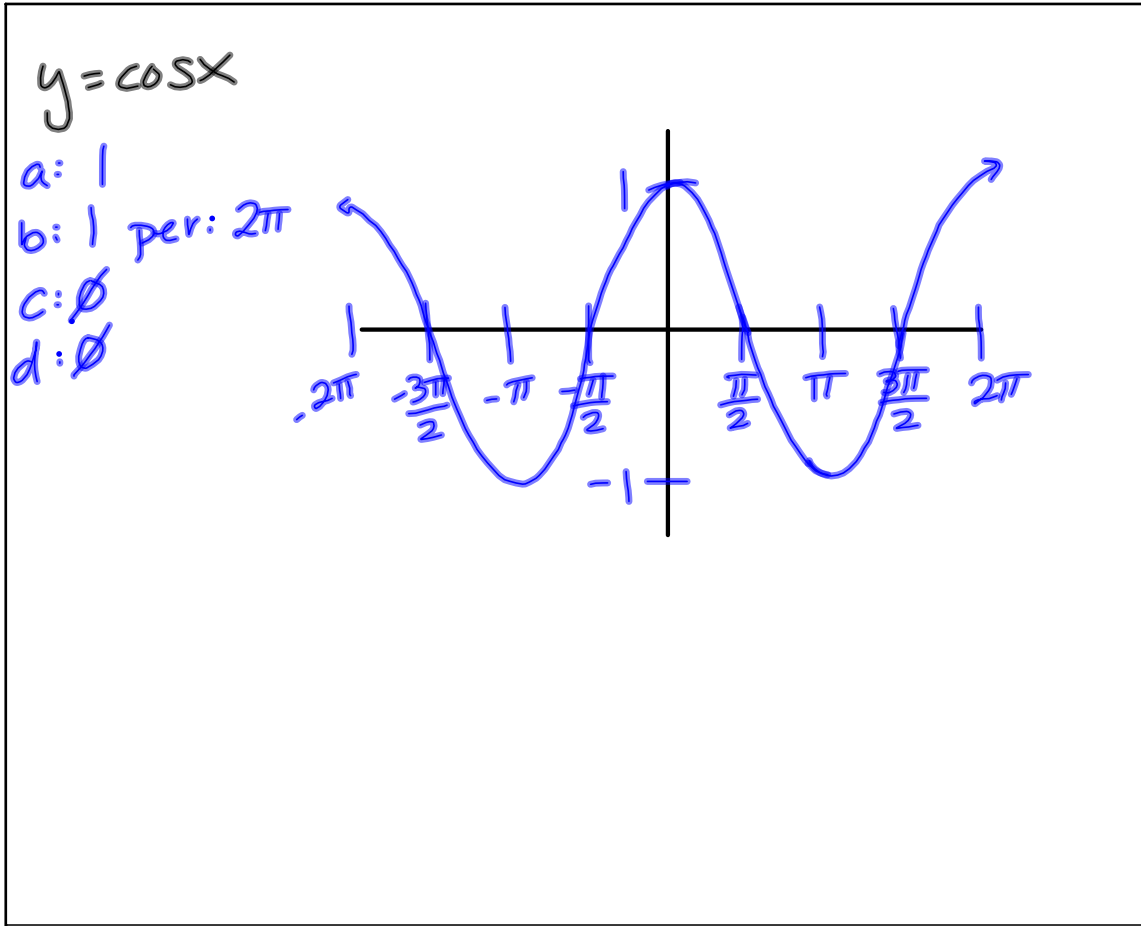
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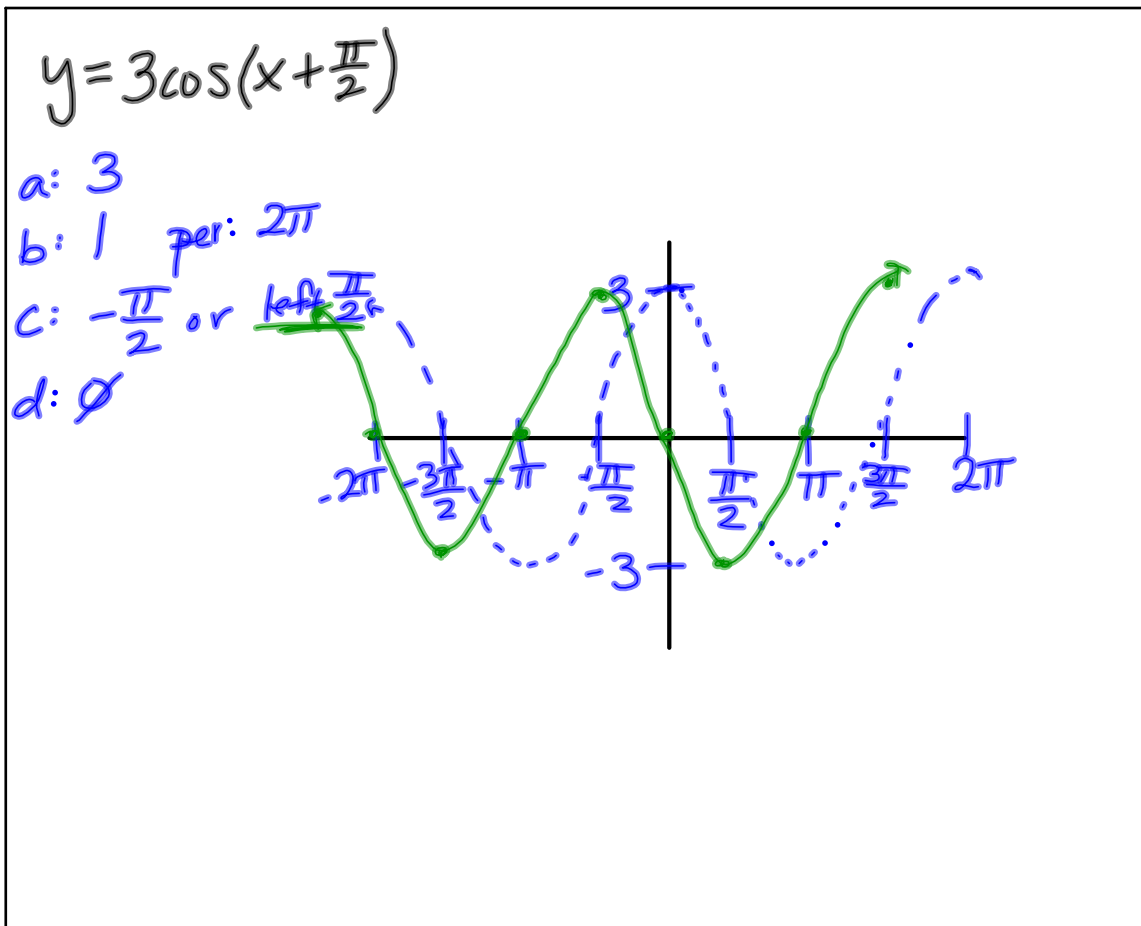
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