

Precalculus A

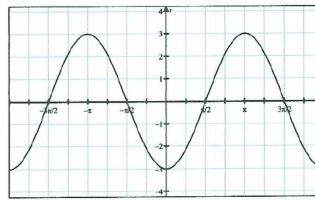
4.4 Graphing the Sine and Cosine Functions

Day 3

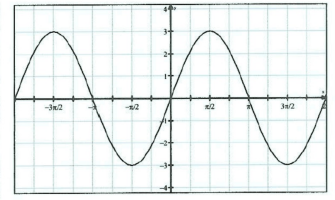
Hw: Finish Classwork Worksheet

D. Paulson

Identify the graph as sine or cosine, amplitude and whether each of the following graphs is a reflection.

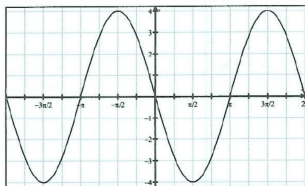


Graph 1
Graph type: cos
Reflected? yes
Amplitude: 3

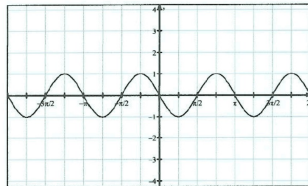


Graph 2
Graph type: sin
Reflected? no
Amplitude: 3

D. Paulson



Graph 3
Graph type: sin
Reflected? yes
Amplitude: 4



Graph 4
Graph type: sin
Reflected? yes
Amplitude: 1

D. Paulson

Describe how the graph of the function is related to the graph $y = \sin x$ using the language of transformations.

5. $y = 2 \sin x$ Vertical stretch by a factor of 2.
6. $y = \frac{2}{3} \sin x$ Vertical shrink by a factor of $\frac{2}{3}$.
7. $y = -\frac{5}{2} \sin x$ Vertical stretch by a factor of $\frac{5}{2}$.
Vertical reflection
8. $y = -7 \sin x$ Vertical stretch by factor of 7.
Vertical reflection

Identify the maximum and minimum values of the function. Use your understanding of amplitude, not your graphing calculators.

9. $y = 5 \cos x$

Max = 5
Min = -5

10. $y = -\frac{1}{3} \sin x$

Max = $\frac{1}{3}$
Min = $-\frac{1}{3}$

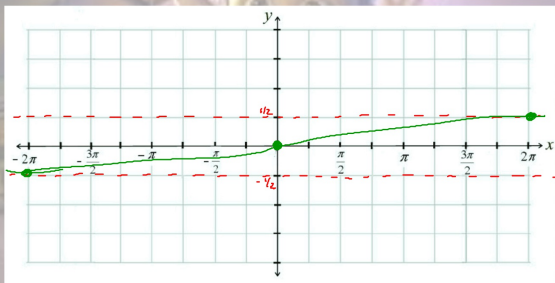
D. Paulson

Graphing from an Equation

$y = \frac{1}{2} \sin(\frac{1}{4}x)$

amplitude $a = \frac{1}{2}$ $b = \frac{1}{4}$

period = $\frac{2\pi}{\frac{1}{4}} = 8\pi$ step = $\frac{8\pi}{4} = 2\pi$



Graphing from an Equation

$y = -2 \cos(2x)$

amplitude $a = 2$ $b = 2$

period = $\frac{2\pi}{2} = \pi$ step = $\frac{\pi}{4}$

