

Translations of Sine and Cosine Graphs

Consider the transformed Sine and Cosine functions:

$$y = a \cdot \sin(bx - c) + d \quad \text{and} \quad y = a \cdot \cos(bx - c) + d$$

Identify what impact each letter has on the parent function.

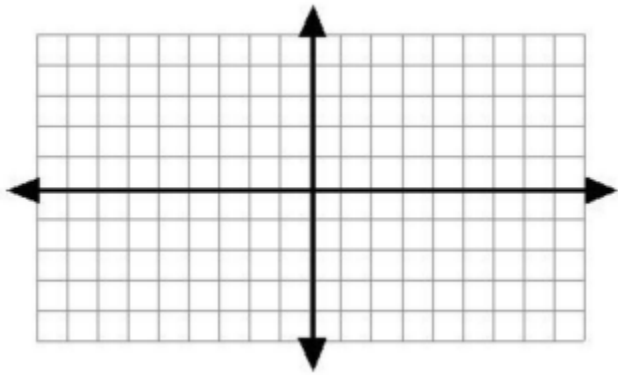
Letter	Impact	Formula
<i>a</i>		
<i>b</i>		
<i>c</i>		
<i>d</i>		

Steps for Graphing Transformed Sine and Cosine Functions

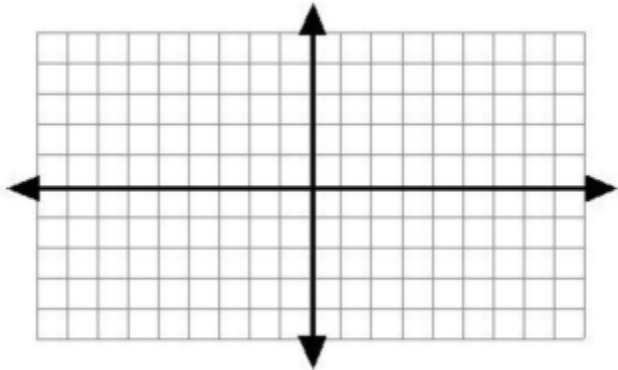
1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

Examples: Graph the following functions.

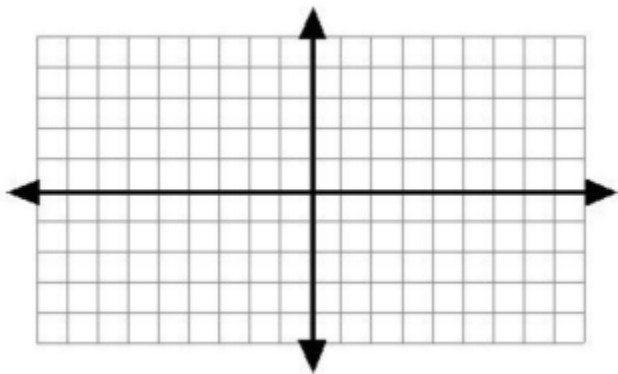
1. $y = 4\cos 3x + 1$



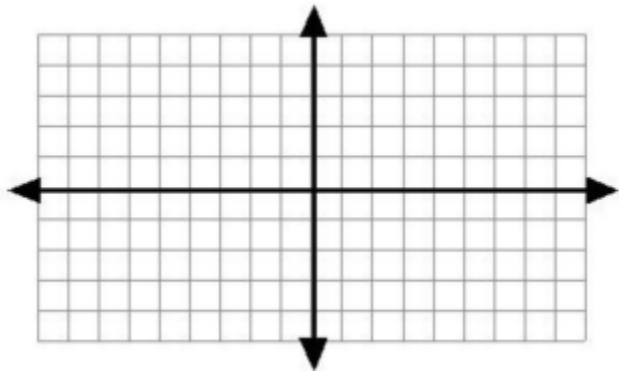
2. $y = -3\sin(x + 30^\circ) - 2$



3. $y = -\cos(2x - 20^\circ) + 1$



4. $y = \frac{1}{2}\sin(3x + 60^\circ) + 2$



5. $y = 3\cos(2x - 60^\circ) - 1$

