

Unit #6: Graphs and Inverses of Trig Functions

Lesson #4: Transformations of Sine and Cosine

Determine the amplitude and period of each function. (Write Period in both Radian and Degree)

1. $y = \sin(4x)$

2. $y = \cos(5x)$

3. $y = 2 \sin(x)$

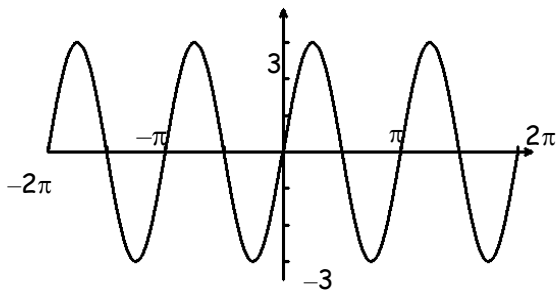
4. $y = -4 \sin(3x)$

5. $y = 2 \sin(-4x)$

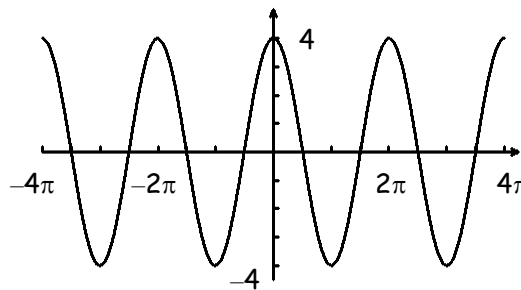
6. $y = 3 \sin\left(\frac{2}{3}x\right)$

Give the amplitude and period of each function graphed below. Then write an equation of each graph in terms of **both sine and cosine**.

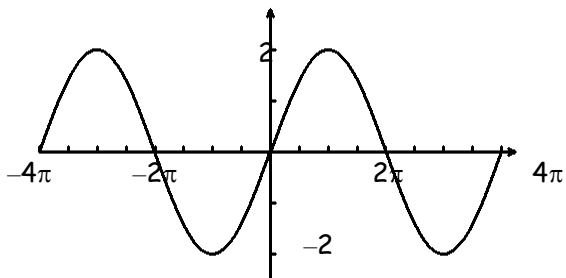
7.



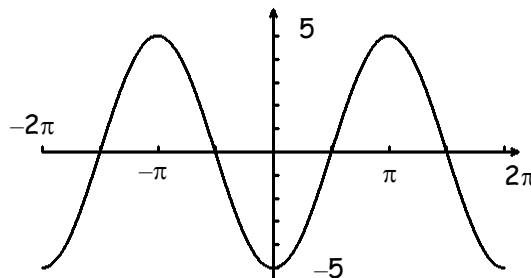
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9.



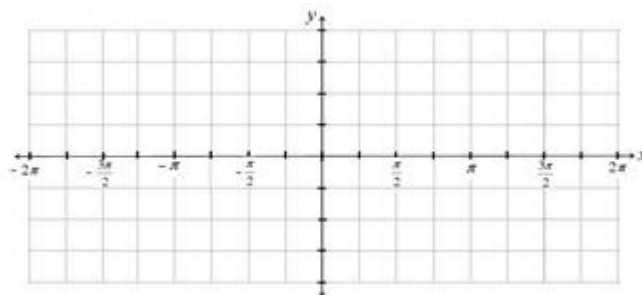
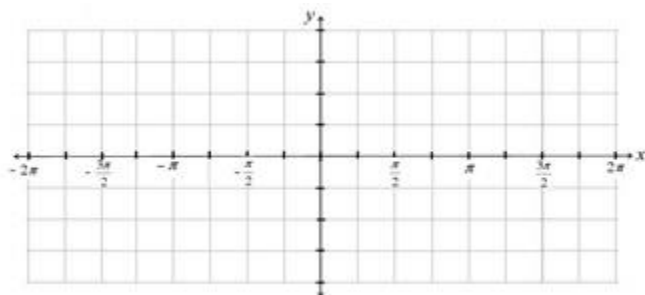
10.



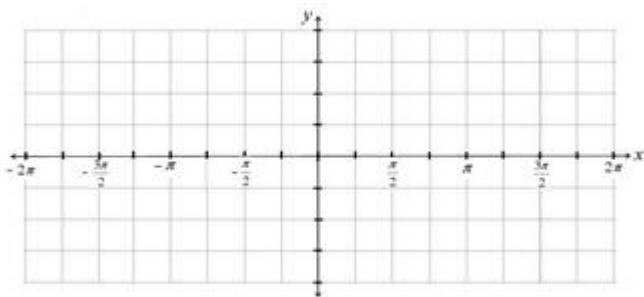
Sketch the graph of the function over the interval $-2\pi \leq x \leq 2\pi$.

11. $y = 4 \sin(x)$

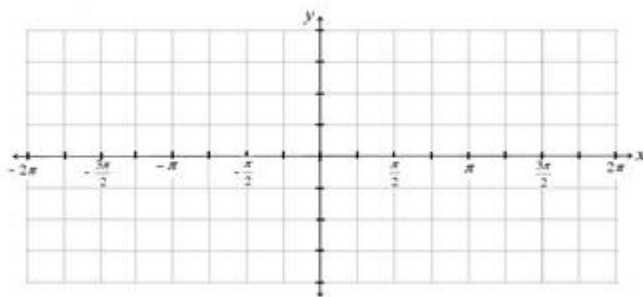
12. $y = 2 \cos(x)$



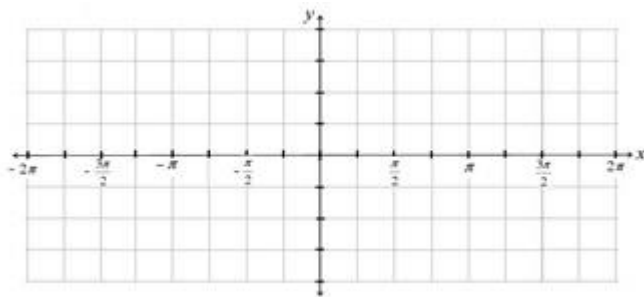
13. $y = 2 \sin(2x)$



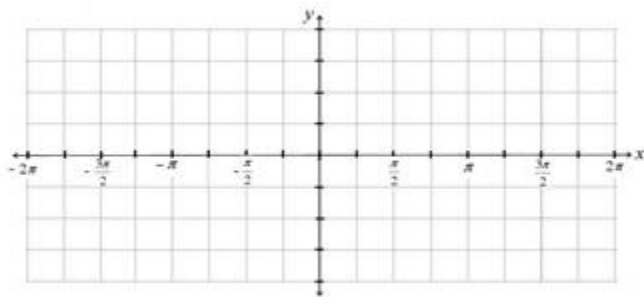
14. $y = -\cos(2x)$



15. $y = 3 \cos\left(\frac{1}{2}x\right)$



16. $y = -2 \sin(4x)$



Determine the amplitude, period, phase shift, and vertical shift for each.

17. $y = 2 + 3 \sin\left(4x + \frac{\pi}{2}\right)$

18. $y = 2 \cos(x - \pi)$

19. $y = \frac{1}{2} \cos(2x) - 4$

20. $y = 3 + 4 \sin(x - \pi)$

Sketch the graph of each function.

21. $y = 1 + 3 \sin\left(2x - \frac{\pi}{2}\right)$

22. $y = 2 \cos(x + \pi) - 2$

