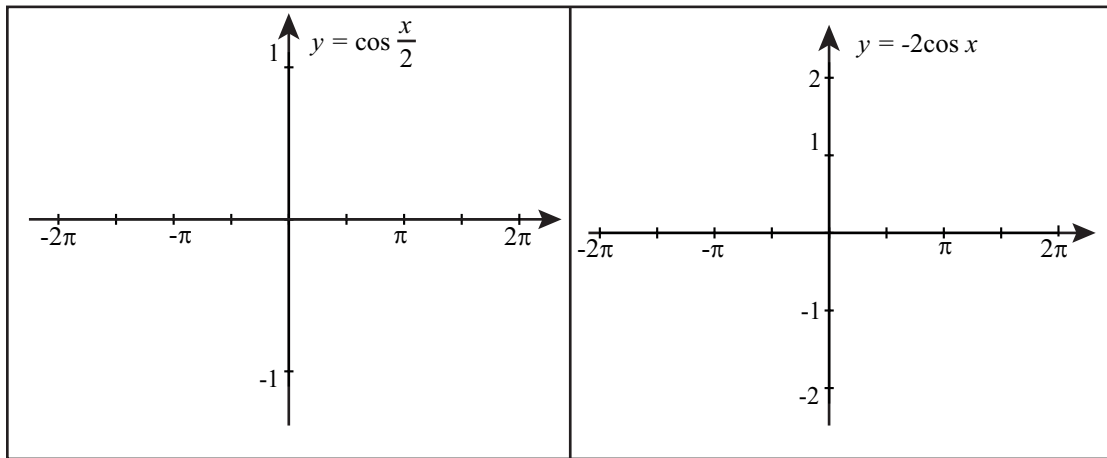# Functions Worksheet 5

1. Graph $y = \cos\left(\frac{x}{2}\right)$ in the above grid.

2. Graph $y = -2\cos(x)$ in the above grid.

3. What is the amplitude of the function $y = \sin(x)$?

4. What is the amplitude of the function $y = \cos(x)$?

5. What is the amplitude and period of the function $y = 3\sin(\pi x + 1)$?

6. What is the amplitude and period of the function $y = 14\cos\left(\frac{1}{\pi}\right)$?

7. How is the graph of $y = \cos(x)$ different from the graph of $y = \cos\left(\frac{1}{2}x\right)$?

8. How is the graph of $y = \sin(2x) + 3$ different from the graph of $y = \sin(2x)$?

9. If the motion for a given spring is described by the equation $y = 10.0\cos(2.0t)$, find the spring's frequency and period.

10. For the spring in question 9, if the mass at the end of the spring is 50.0 kg, find the spring constant. (For an equation in the form $y = y_{max}\cos(\omega t)$, the spring constant $k = m\omega^2$.)

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