

1. On the accompanying grid, sketch the graphs of functions $f(x) = 2\sin\frac{1}{2}x$ and $g(x) = 3\cos x$, and state how many times the functions intersect between $x = -2\pi$ and $x = 2\pi$.



1.

2. A pair of figure skaters graphed part of their routine on a grid. The male skater's path is represented by the equation $m(x) = 4\sin\frac{1}{3}x$, and the female skater's path is represented by the equation $f(x) = -\cos x$. On the accompanying grid, sketch both paths and state how many times the paths of the skaters intersect between $x = 0$ and $x = 6\pi$.



2.

3. Which of the following equations represents a sine curve with a period of 4 and an amplitude of 3?

- (1) $y = -3\sin\frac{1}{2}x$ (3) $y = 4\sin 3x$
(2) $y = -3\sin\frac{\pi}{2}x$ (4) $y = 3\sin 4x$

3.

4. On the accompanying set of axes, graph the equations $y = -2\sin x$ and $y = -2$ in the domain $-\pi \leq x \leq 2\pi$. How many times do these functions intersect in the given interval?



4.

5. On the accompanying grid, sketch the graphs of functions $f(x) = 3\sin\frac{2}{3}x$ and $g(x) = \tan x$, and state how many times the functions intersect between $x = 0$ and $x = 6\pi$.



5.

6. *a* Sketch the graph of the equation $y = -\sin\frac{1}{4}x$ in the interval $-4\pi \leq x \leq 4\pi$.
b On the same set of axes, reflect the graph drawn in part *a* in the line $x = 2\pi$.
c How are these two graphs related?



6.