

This graph has the hill and valley shape of a sine function, so  $y = a \sin bx$ . The amplitude is 3. It has the same orientation as the graph of  $y = \sin x$  and therefore  $a = 3$ .

Now there are 6 cycles shown on the interval  $[0, 3\pi]$ , or 4 cycles on the interval  $[0, 2\pi]$ . This tells you that  $b = 4$ . So this could be the graph of  $y = 3 \sin 4x$ .