The graph of a sine function would have a hill or valley on each side of the *y*-axis, while a cosine function would have a hill or valley with the *y*-axis running through the middle of it. This graph has a hill to the left of the *y*-axis, so it has the form $y = a\sin bx$.

The graph of $y = \sin x$ has a valley to the left of the *y*-axis. Because the graph in question has a hill there, a reflection has taken place. This implies that $a < 0$.