

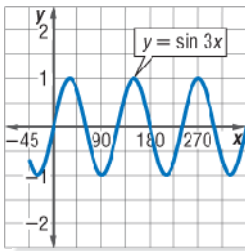
Lesson 14-4

Example 1

COMMUNICATIONS A tone transmitted to ship at sea produces a sound wave with the equation $y = \sin 3x$. State the period.

Solution

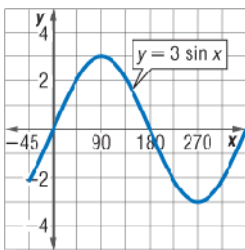
The effect of the coefficient 3 in the equation is to compress the sine curve horizontally. The period of $y = \sin 3x$ is 120° , one-third the period of $y = \sin x$.



Example 2

Graph $y = 3 \sin x$. State the amplitude.

Solution

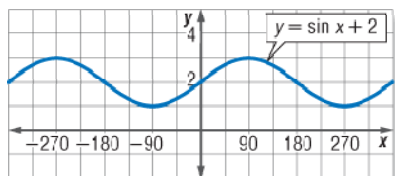


The graph of $y = 3 \sin x$ is three times as tall and three times as deep as the graph of $y = \sin x$.

The amplitude is $\frac{1}{2}(3 + |-3|) = 3$.

Example 3

Graph $y = \sin x + 2$. Describe the position of the graph.

Solution

The graph of $y = \sin x + 2$ is the graph of $y = \sin x$ raised 2 units above its normal position.