

Two harmonic waves are described by :

$$y_1(x,t) = 4 \sin(8x - 300t)$$

$$y_2(x,t) = 4 \sin(8x - 300t - 2)$$

where x is in centimeters and t is in seconds.

What is the frequency of the resultant wave?

A1 48 Hz.

A2 24 Hz.

A3 33 Hz.

A4 38 Hz .

A5 75 Hz.

The maximum amplitude of a standing wave on a string, with linear density = 3.00 grams/m and tension of 15.0 N, is 0.20 cm. If the distance between adjacent nodes is 12.0 cm, what will be the wave function $y(x,t)$ of the standing wave?

(Note that x is in centimeters and t is in seconds)

A1 $y(x,t) = 0.20 \sin(0.262x) \cos(1.85 \times 10^3 t)$

A2 $y(x,t) = 0.20 \sin(0.421x) \cos(1.85 \times 10^3 t)$

A3 $y(x,t) = 0.40 \sin(0.262x) \cos(1.11 \times 10^3 t)$

A4 $y(x,t) = 0.40 \sin(0.421x) \cos(1.85 \times 10^3 t)$

A5 $y(x,t) = 0.20 \sin(0.262x) \cos(2.20 \times 10^3 t)$