1   The distance traveled by a wave in one period is called?

○ A   **Frequency**

○ B   **Period**

○ C   **Speed of wave**

○ D   **Wavelength**

○ E   **Amplitude**

2   Which of the following is the speed of a wave traveling with a wavelength λ, frequency f, and period T?

A $v = \dfrac{\lambda}{f}$

B $v = \dfrac{f}{\lambda}$

C $v = \lambda f$

D $v = fT$

E $v = \dfrac{f}{T}$

3 **The frequency of a wave is doubled when the wavelength remains the same. What happens to the speed of the wave?**

○ A   **It doubles**

○ B   **It quadruples**

○ C   **Remains unchanged**

○ D   **It is cut to one-half**

○ E   **It is cut to one-fourth**

4   **The frequency of a wave increases when the speed remains the same. What happens to the distance between two consecutive crests?**

○ A   **It increases**

○ B   **It decreases**

○ C   **Stays unchanged**

○ D   **It increases first and then decreases**

○ E   **It decreases first and then increases**

5 Which of the following statements is true about transverse waves?

○ A   **They always have the same frequencies**

○ B   **They always have the same velocities**

○ C   **They always have the same wavelengths**

○ D   **They always travel through a dense medium**

○ E   **The particles vibrate in perpendicular direction with respect to the wave motion**

6   Which of the following statements is true about longitudinal waves?

○ A   **They always have the same frequencies**

○ B   **They always have the same velocities**

○ C   **They always have the same wavelengths**

○ D   **They always travel through a dense medium**

○ E   **The particles vibrate along the same direction as the wave motion**

7 **A wave travels on a string of length L, linear density μ, and tension T. Which of the following is true?**

○ A **The wave speed is inversely proportional to the tension T**

○ B **The wave speed is directly proportional the linear density μ**

○ C **The wave speed increases with increasing tension T**

○ D **The wave speed increases with increasing linear density**

○ E **The wave speed only depends on the length of the string**

8   A wave pulse travels a long a thin part of a horizontal cord and reaches another part of the cord which is much thicker and heavier. Which of the following is true about the reflected and transmitted pulse by the boundary in the cord?

Reflected pulse	Transmitted pulse
A Upright	Upright
B Inverted	Inverted
C Upright	Inverted
D Inverted	Upright
E Zero amplitude	Zero amplitude

9 **A wave pulse travels a long a thick part of a horizontal cord and reaches another part of the cord which is much thinner and lighter. Which of the following is true about the reflected and transmitted pulse by the boundary in the cord?**

		Reflected pulse	**Transmitted pulse**
○	A	Upright	Upright
○	B	Inverted	Inverted
○	C	Upright	Inverted
○	D	Inverted	Upright
○	E	Zero amplitude	Zero amplitude

10 Two wave pulses with equal positive amplitudes travel on a cord approaching each other. What is the result of the oscillations when the pulses reach the same point?

○ A   **It is constructive interference with twice the amplitude**

○ B   **It is destructive interference with zero amplitude**

○ C   **It is constructive interference with slightly greater amplitude**

○ D   **It is constructive interference with the negative amplitude**

○ E   **The standing wave is produced**

11 **Two wave pulses one with a positive amplitude the other with equal negative amplitude travel on a cord approaching each other. What is the result of the oscillations when the pulses reach the same point?**

○ A **It is constructive interference with twice the amplitude**

○ B **It is destructive interference with zero amplitude**

○ C **It is constructive interference with slightly greater amplitude**

○ D **It is constructive interference with the negative amplitude**
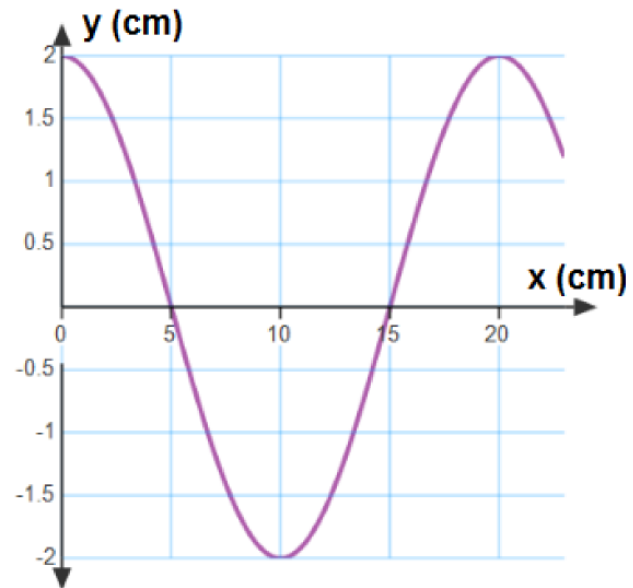
○ E **The standing wave is produced**

12 What is the amplitude of oscillations?

○ A   0.5 cm
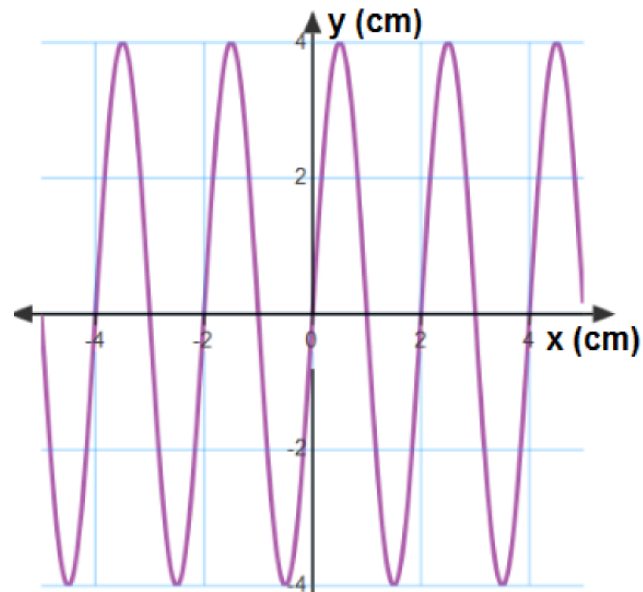
○ B   1 cm

○ C   2 cm

○ D   5 cm
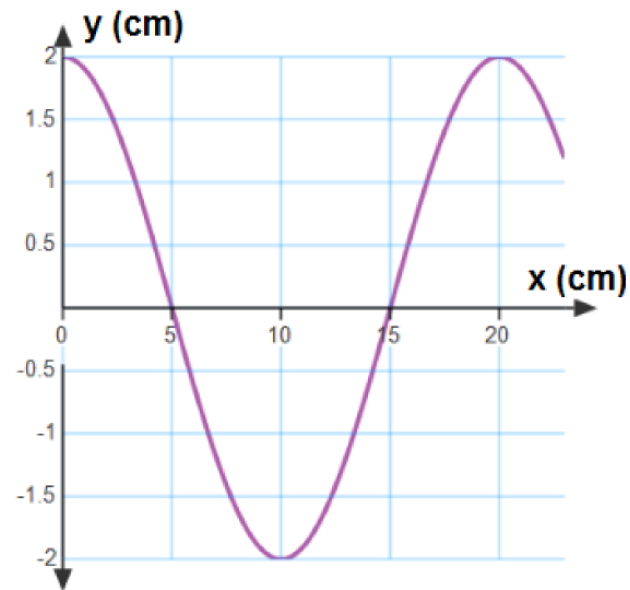
○ E   20 cm

13 What is the wavelength of the wave?

○ A 0.5 cm

○ B 1 cm

○ C 2 cm

○ D 5 cm

○ E 20 cm
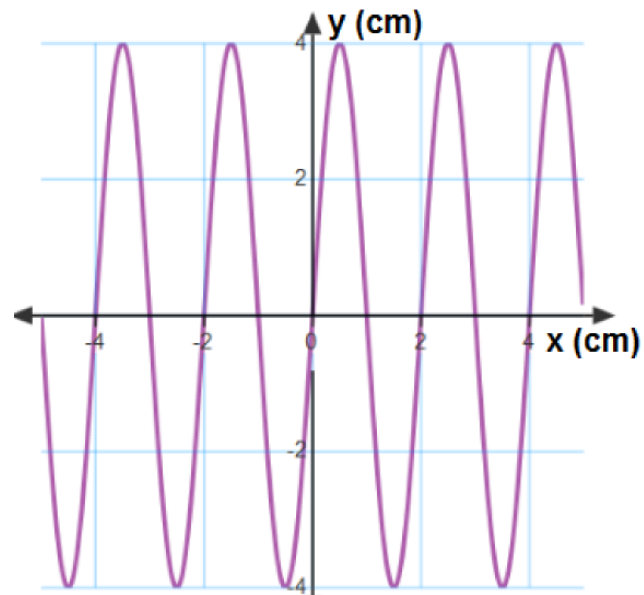
14   What is the amplitude of oscillations?

○ A   1 cm

○ B   2 cm

○ C   4 cm

○ D   6 cm
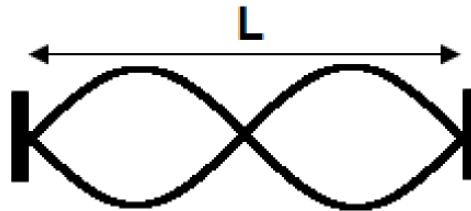
○ E   8 cm

15   What is the wavelength of the wave?

○ A   1 cm

○ B   2 cm

○ C   4 cm

○ D   6 cm

○ E   8 cm

16   A stretched string of length L = 2 m resonates in two loops. What is the wavelength of the wave?
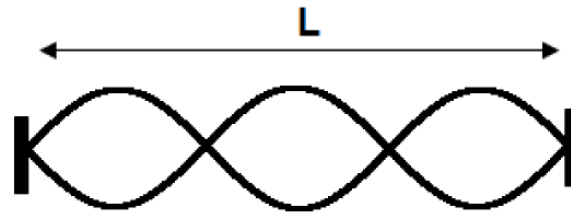
○ A   1 m

○ B   2 m

○ C   3 m

○ D   4 m

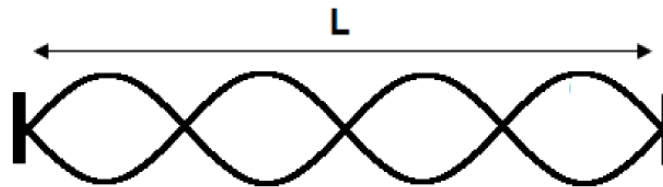○ E   6 m

17 A stretched string of length L = 6 m resonates in
    three loops. What is the wavelength of the wave?

○ A 1 m

○ B 2 m

○ C 3 m

○ D 4 m

○ E 6 m

18 A stretched string of length 8 m vibrates at a frequency of 50 Hz producing a standing wave pattern with 4 loops. What is the speed of wave?

○ A   50 m/s

○ B   100 m/s

○ C   150 m/s

○ D   200 m/s

○ E   250 m/s

19 A guitar string resonates at a frequency of 500 Hz forming a standing wave pattern with 5 loops. What is the fundamental frequency?

○ A   100 Hz

○ B   200 Hz

○ C   300 Hz

○ D   400 Hz

○ E   500 Hz

20   A guitar string resonates at a fundamental frequency of 300 Hz. Which of the following frequencies can set the string into resonance?

○ A   30 Hz

○ B   100 Hz

○ C   400 Hz

○ D   500 Hz

○ E   600 Hz