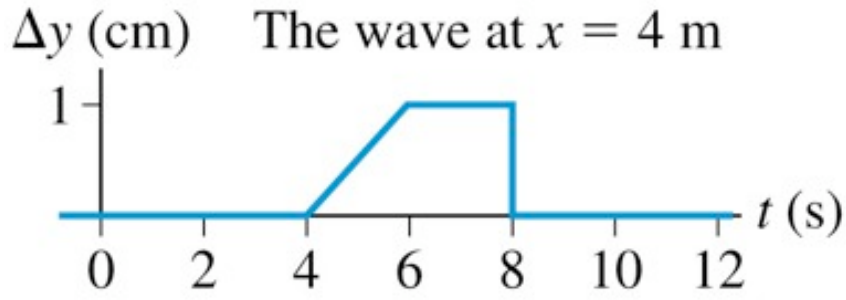
Question:

The graph at the top is the history graph at $x = 4m$ of a wave traveling to the right at a speed of $2m/s$. Which is the history graph of this wave at $x = 0m$?



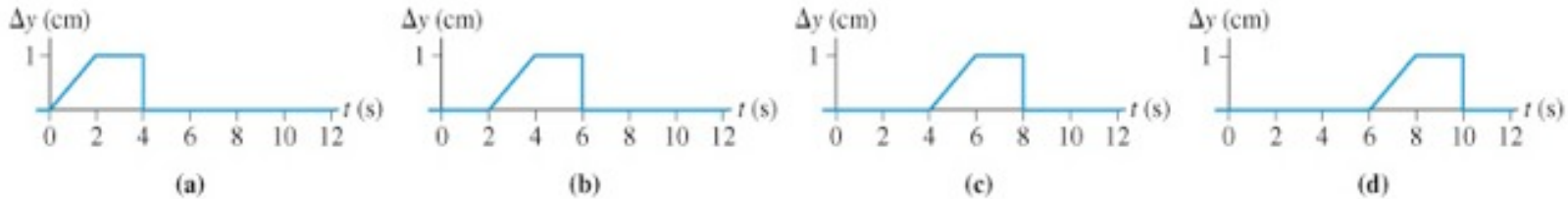
(A)

(B) ✓

(C)

(D)

(E)



Question:

What is the phase difference between the crest of a wave and the adjacent trough?

(A) 0

(B) π

(C) $\pi/4$

(D) $\pi/2$

(E) $3\pi/2$

Question:

Consider the following waves:

- The “wave” made by fans at sports events
- Waves on the survace of a lake
- Music in the auditorium
- TV signals transmitting pictures

How many of the above four are transverse waves?

(A) All four

(B) *Three of them*

(C) Two of them

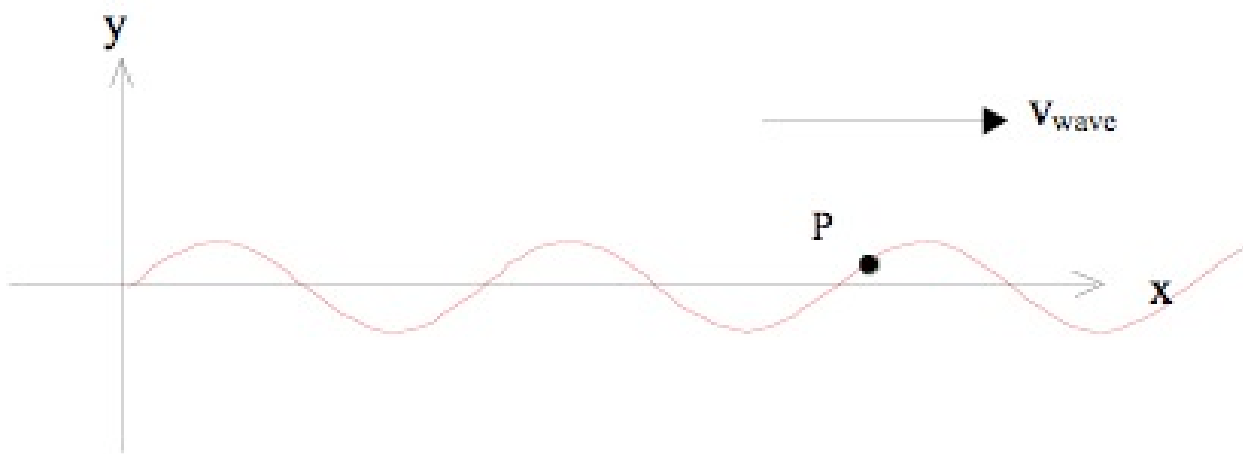
(D) Just one of them

(E) None are transverse

Question:

The graph below shows a snapshot of a wave on a string which is traveling to the right. There is a bit of paint on the string at point P. At the instant shown, the velocity of paint point P has which direction?

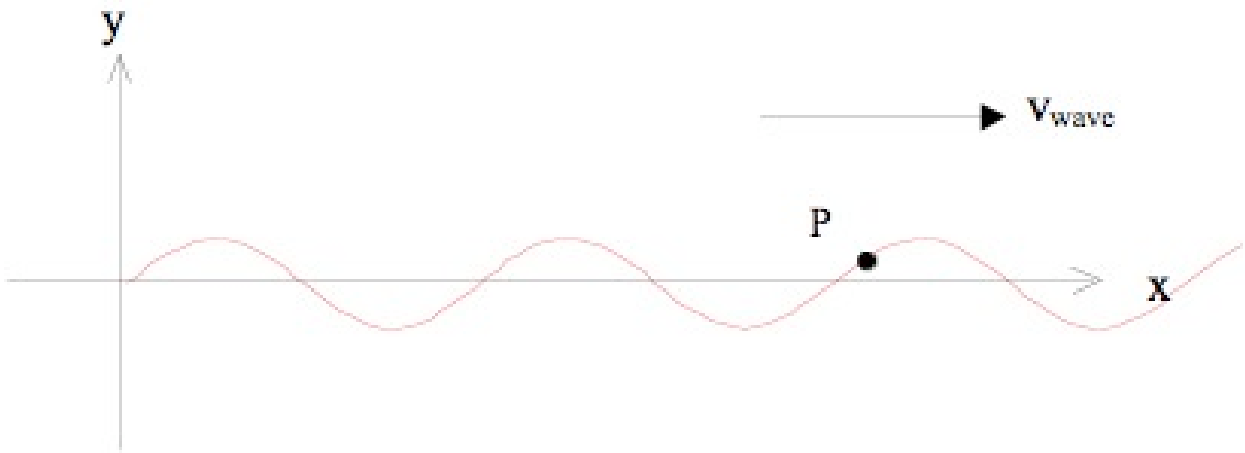
(A) Up
(B) *Down*
(C) Left
(D) Right
(E) None of the above



Question:

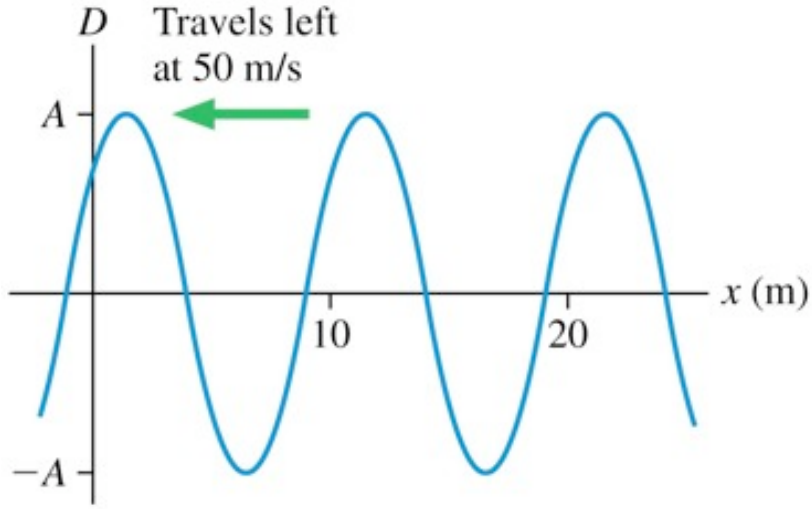
The graph below shows a snapshot of a wave on a string which is traveling to the right. There is a bit of paint on the string at point P. At the instant shown, the acceleration of paint point P has which direction?

(A) Up
(B) *Down*
(C) Left
(D) Right
(E) None of the above



Question:

What is the frequency of this traveling wave?



(A) 0.1 *Hz*

(B) 0.2 *Hz*

(C) 2 *Hz*

(D) *5 Hz*

(E) 10 *Hz*

Question:

Which of the following actions would make a pulse travel faster down a stretched string?

(A) Use a heavier string of the same length, under the same tension.

(B) *Use a lighter string of the same length, under the same tension.*

(C) Move your hand up and down more quickly as you generate the pulse.

(D) Move your hand up and down a larger distance as you generate the pulse.

(E) Use a longer string of the same thickness, density, and tension.

Question:

Three waves are traveling along identical strings. Wave *B* has twice the amplitude of the other two. Wave *C* has 1/2 the wavelength of *A* or *B*. Which wave propagates fastest?

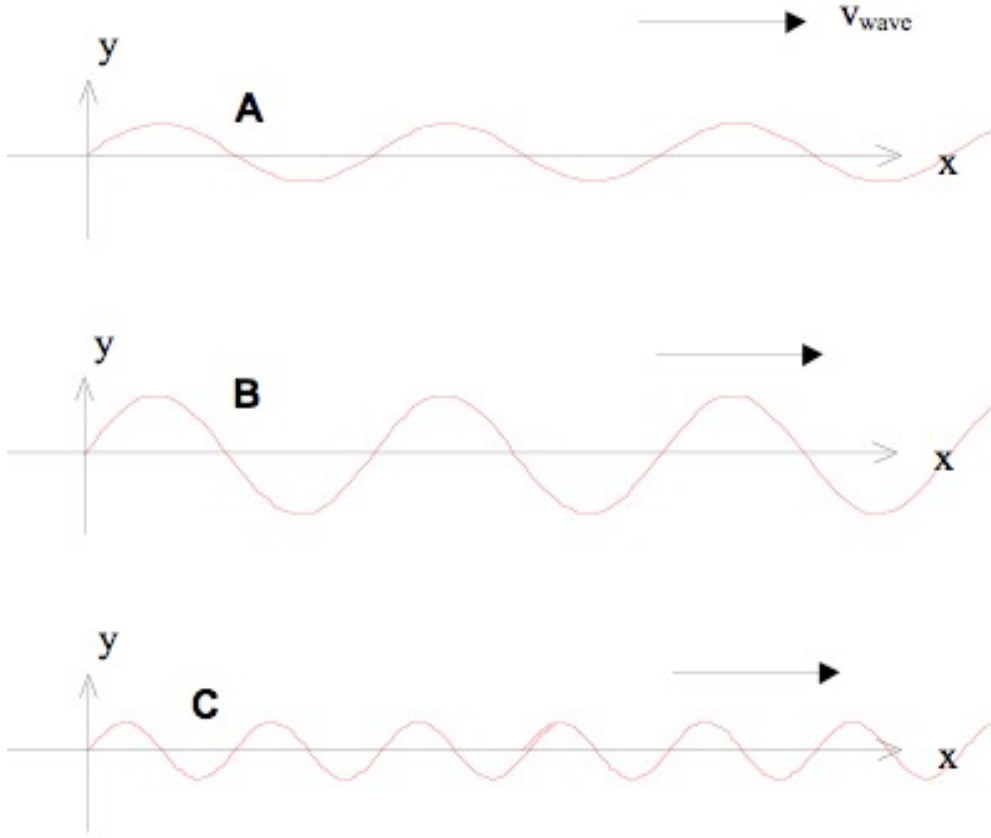
(A) *A*

(B) *B*

(C) *C*

(D) *A* and *B*

(E) *All three propagate at the same speed*



Question:

Three waves are traveling along identical strings. Wave *B* has twice the amplitude of the other two. Wave *C* has 1/2 the wavelength of *A* or *B*. Which wave has the highest frequency?

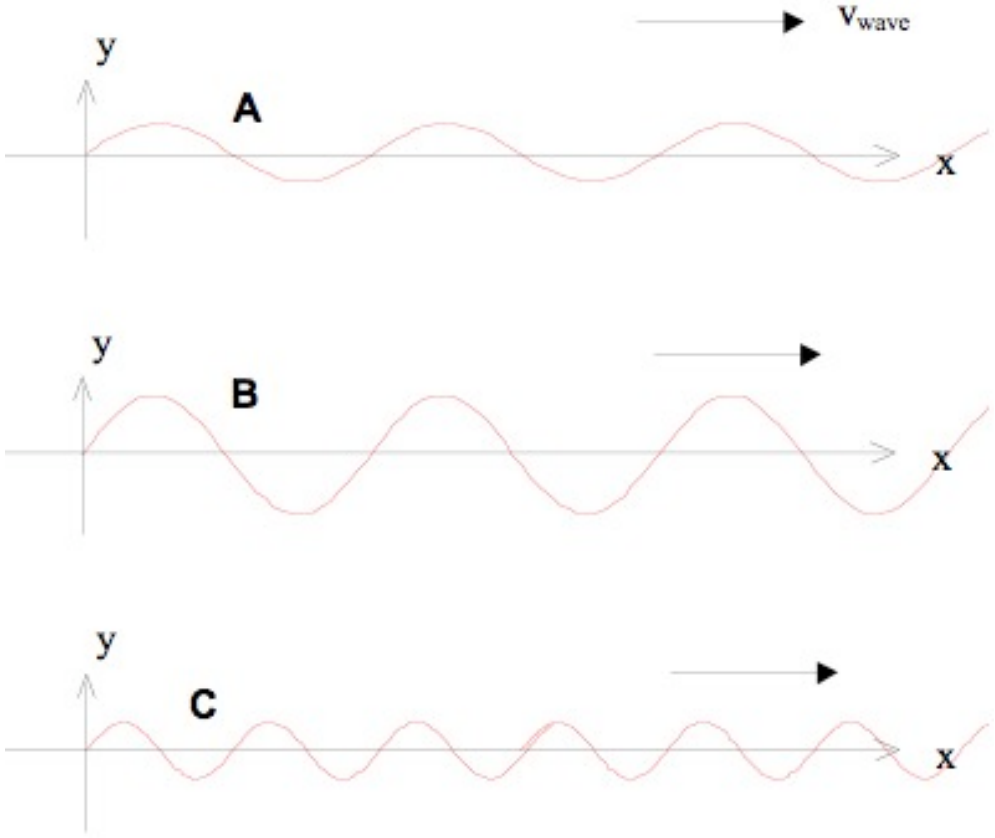
(A) *A*

(B) *B*

(C) *C*

(D) *A* and *B*

(E) Not enough information is given



Question:

Amy and Zack are both listening to the source of sound waves that is moving to the right. Which choice is correct?

(A) $f_{Amy} > f_{Zach}$

(B) $f_{Amy} = f_{Zach}$

(C) $f_{Amy} < f_{Zach}$

(D) $f_{Amy} = f_0$

(E) $f_{Zach} = f_0$