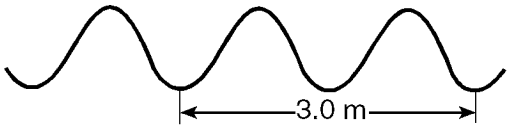
Name: _____

Chapter 11.3 Properties of Waves Regents Problems

1) A surfacing whale in an aquarium produces water wave crests having an amplitude of 1.2 meters every 0.40 second. If the water wave travels at 4.5 meters per second, what is the wavelength of the wave?

2) The periodic wave in the diagram below has a frequency of 40. hertz.

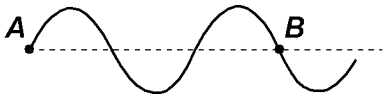


What is the speed of the wave?

A) 13 m/s B) 60. m/s C) 120 m/s D) 27 m/s

3) A wave completes one vibration as it moves a distance of 2 meters at a speed of 20 meters per second. What is the frequency of the wave?

4) The diagram below shows two points, *A* and *B*, on a wave train.



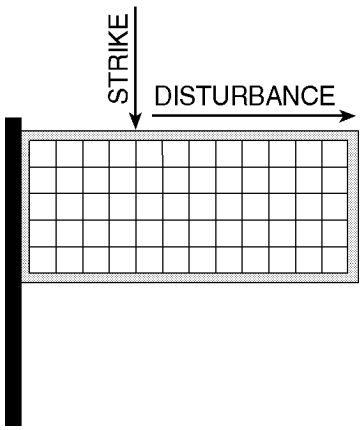
How many wavelengths separate point *A* and point *B*?

A) 0.75 B) 1.0 C) 3.0 D) 1.5

5) A motor is used to produce 4.0 waves each second in a string. What is the frequency of the waves?

6) What is the period of a wave if 20 crests pass an observer in 4 seconds?

7) A student strikes the top rope of a volleyball net, sending a single vibratory disturbance along the length of the net, as shown in the diagram below.



This disturbance is *best* described as

A) a longitudinal wave
B) an electromagnetic wave
C) a pulse
D) a periodic wave

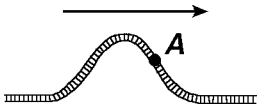
8) Which phrase *best* describes a periodic wave?

A) a single pulse traveling at constant speed
B) a single pulse traveling at different speeds in the same medium
C) a series of pulses at regular intervals
D) a series of pulses at irregular intervals

9) As a wave travels between two points in a medium, the wave transfers

A) neither energy nor mass
B) mass, only
C) energy, only
D) both energy and mass

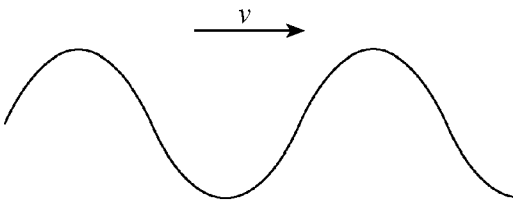
10) The diagram below shows a pulse moving to the right in a rope. *A* is a point on the rope.



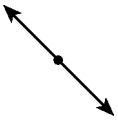
Which arrow *best* shows the direction of movement of point *A* at this instant?

A) 
B)
C)
D) 

11) A transverse wave passes through a uniform material medium from left to right, as shown in the diagram below.



Which diagram *best* represents the direction of vibration of the particles of the medium?

A) 

B)

C) 

D) 

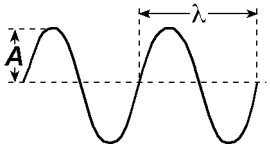
12) The energy of a water wave is most closely related to its

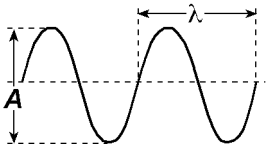
A) wavelength B) period C) amplitude D) frequency

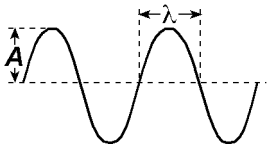
13) As a pulse travels along a rope, the pulse loses energy and its amplitude

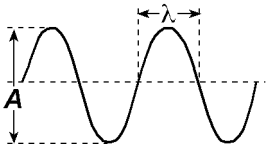
A) remains the same B) increases C) decreases

14) Which wave diagram has *both* wavelength (λ) and amplitude (*A*) labeled correctly?

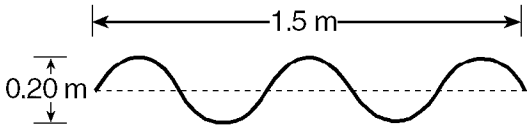
A) 

C) 

B) 

D) 

15) What are the amplitude and wavelength of the wave shown below?



A) amplitude = 0.20 m, wavelength = 0.60 m
B) amplitude = 0.10 m, wavelength = 0.30 m
C) amplitude = 0.20 m, wavelength = 0.30 m
D) amplitude = 0.10 m, wavelength = 0.60 m