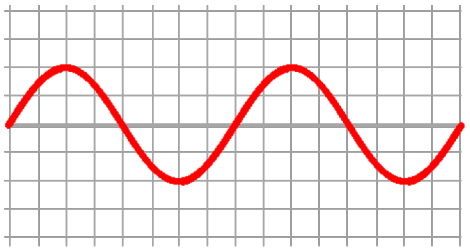
Waves: Case Studies

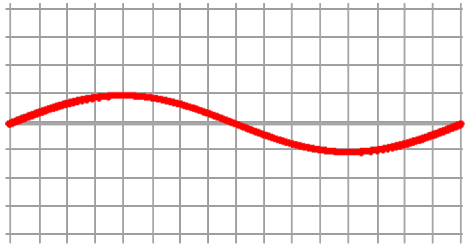
Activity 1: Wavelength and Amplitude

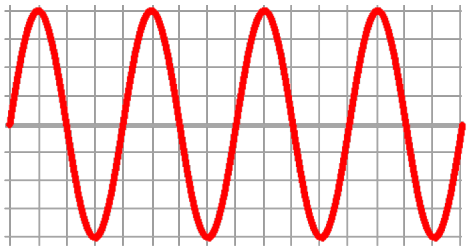
Question Group 1

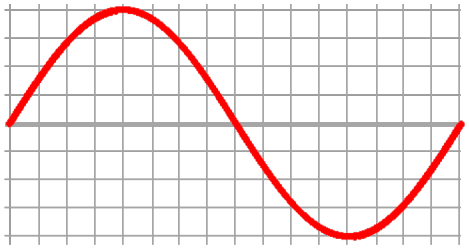
Question 1

The diagram at the right is a snapshot in time of a wave moving along a rope. Which diagram below represents a wave moving through the same rope but having twice the wavelength and one-half the amplitude?



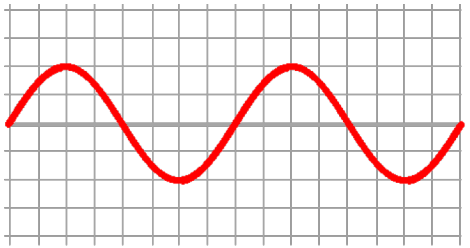


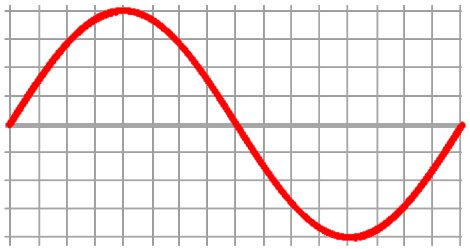


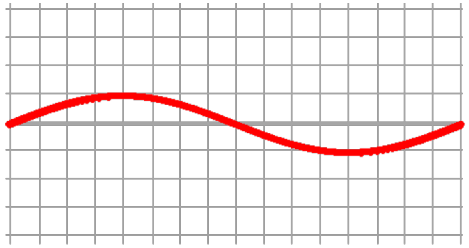


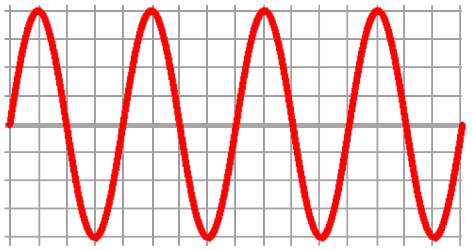
Question 2

The diagram at the right is a snapshot in time of a wave moving along a rope. Which diagram below represents a wave moving through the same rope but having twice the wavelength and one-half the amplitude?



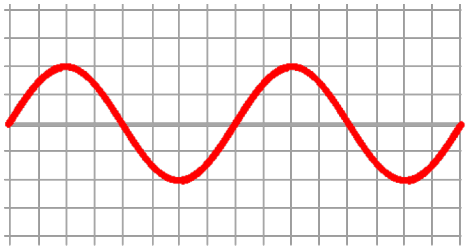


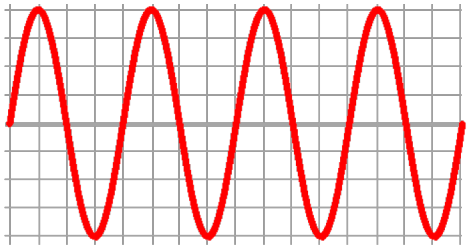


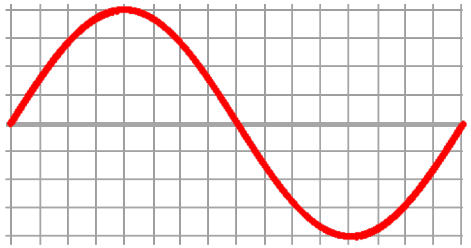


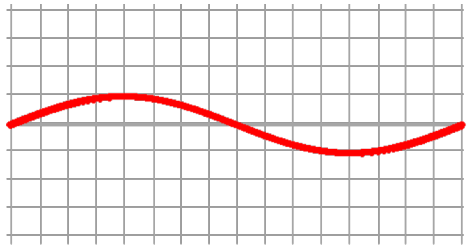
Question 3

The diagram at the right is a snapshot in time of a wave moving along a rope. Which diagram below represents a wave moving through the same rope but having twice the wavelength and one-half the amplitude?



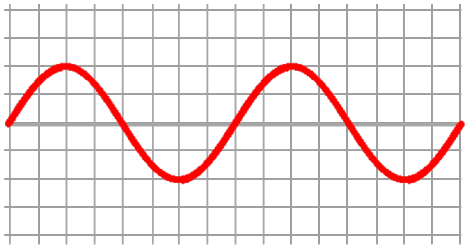


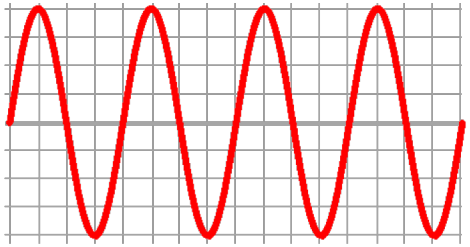


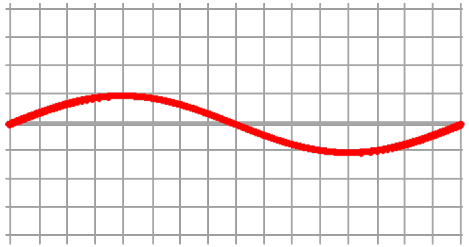


Question Group 2
Question 4

The diagram at the right is a snapshot in time of a wave moving along a rope. Which diagram below represents a wave moving through the same rope but having twice the wavelength and twice the amplitude?

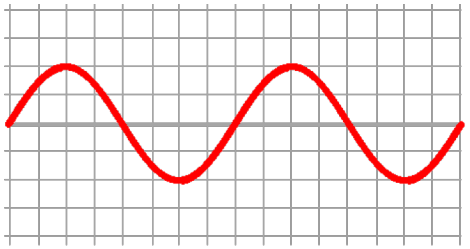


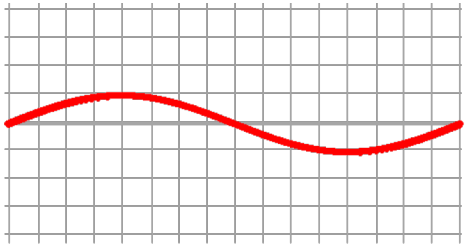


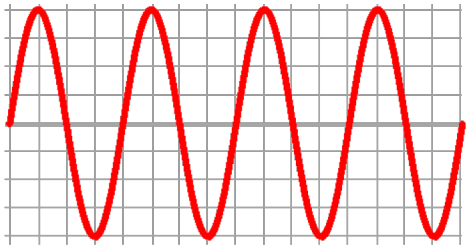


Question 5

The diagram at the right is a snapshot in time of a wave moving along a rope. Which diagram below represents a wave moving through the same rope but having twice the wavelength and twice the amplitude?

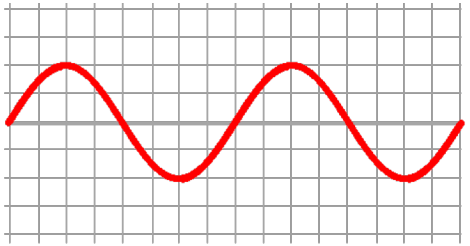


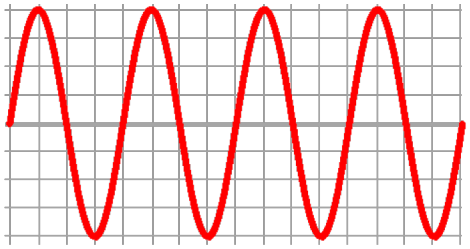


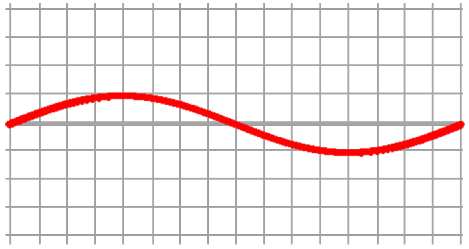


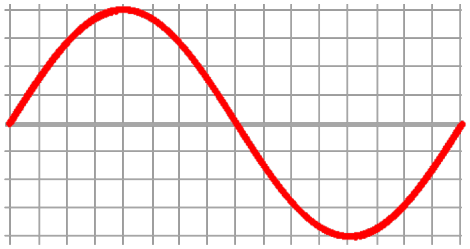
Question 6

The diagram at the right is a snapshot in time of a wave moving along a rope. Which diagram below represents a wave moving through the same rope but having twice the wavelength and twice the amplitude?



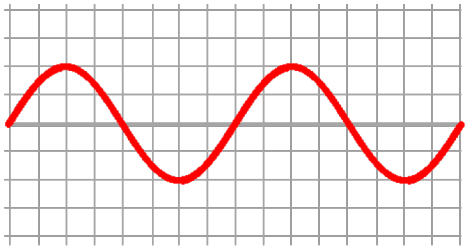


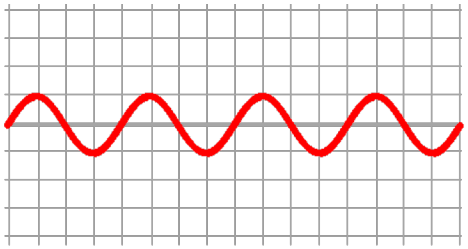


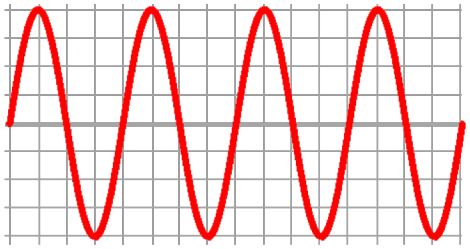


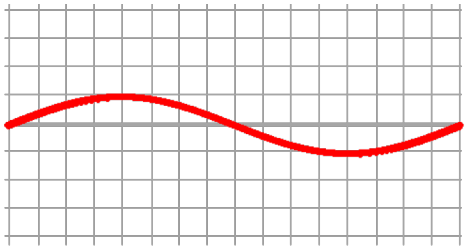
Question Group 3
Question 7

The diagram at the right is a snapshot in time of a wave moving along a rope. Which diagram below represents a wave moving through the same rope but having one-half the wavelength and one-half the amplitude?



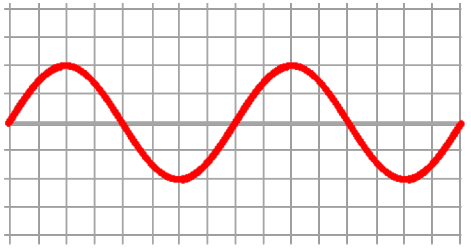


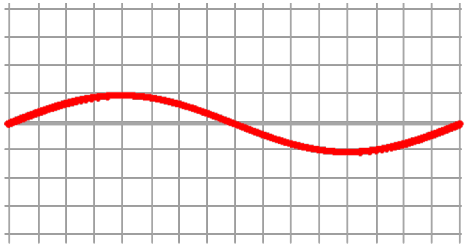


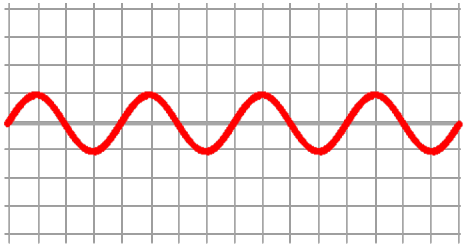


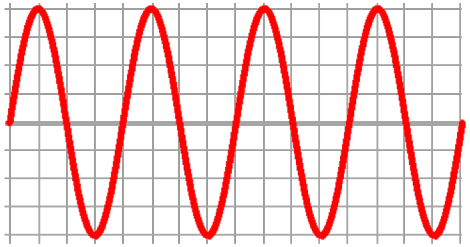
Question 8

The diagram at the right is a snapshot in time of a wave moving along a rope. Which diagram below represents a wave moving through the same rope but having one-half the wavelength and one-half the amplitude?



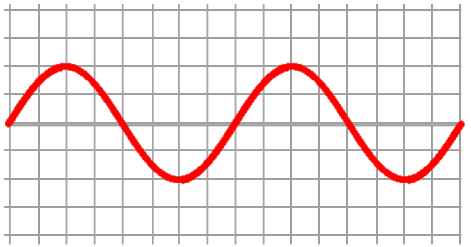


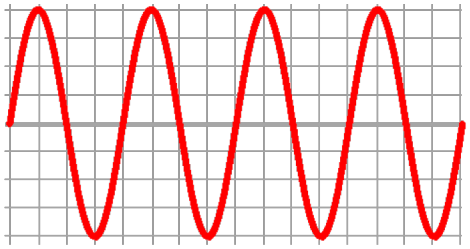


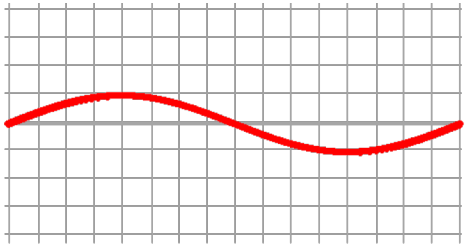


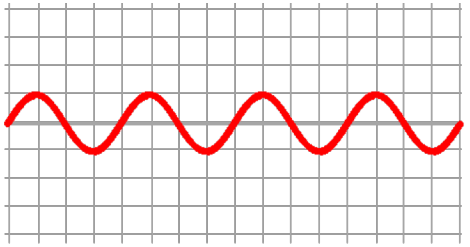
Question 9

The diagram at the right is a snapshot in time of a wave moving along a rope. Which diagram below represents a wave moving through the same rope but having one-half the wavelength and one-half the amplitude?



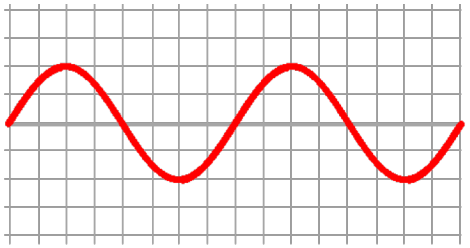


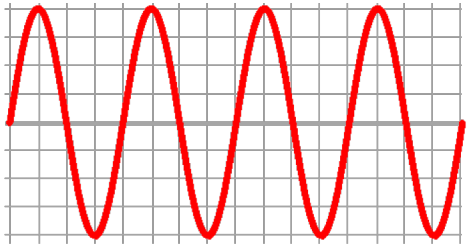


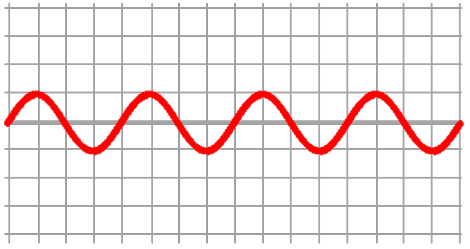


Question Group 4
Question 10

The diagram at the right is a snapshot in time of a wave moving along a rope. Which diagram below represents a wave moving through the same rope but having one-half the wavelength and twice the amplitude?

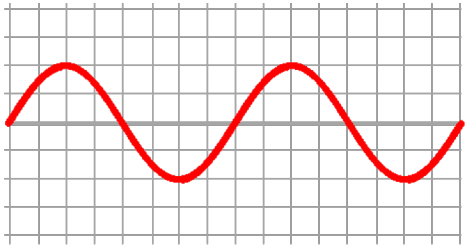


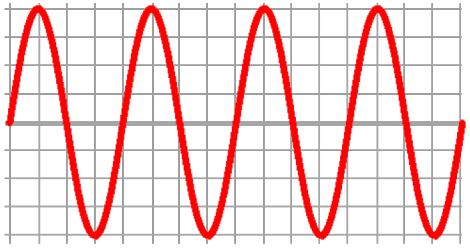


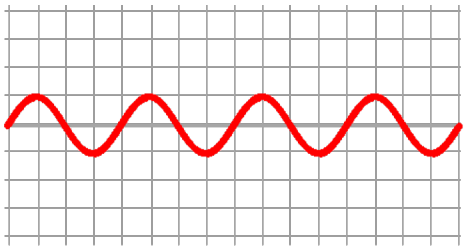


Question 11

The diagram at the right is a snapshot in time of a wave moving along a rope. Which diagram below represents a wave moving through the same rope but having one-half the wavelength and twice the amplitude?

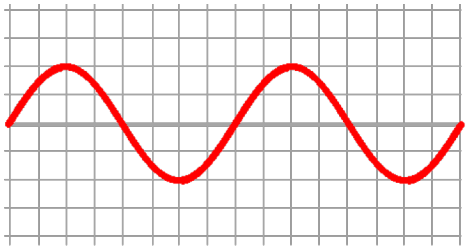


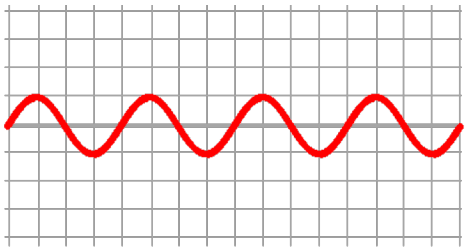


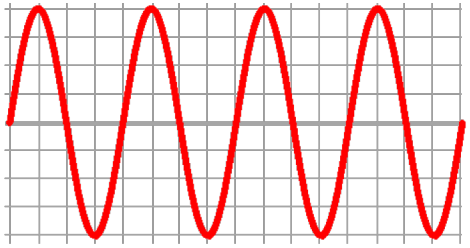


Question 12

The diagram at the right is a snapshot in time of a wave moving along a rope. Which diagram below represents a wave moving through the same rope but having one-half the wavelength and twice the amplitude?

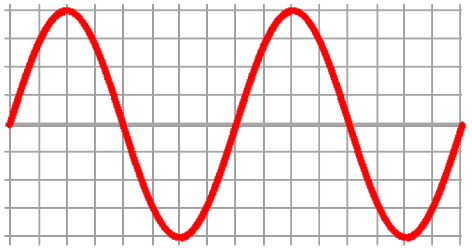


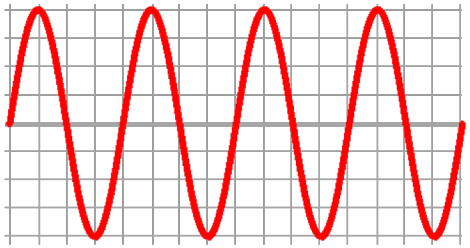


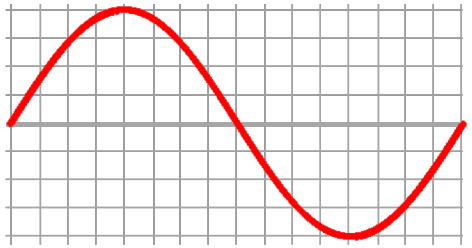


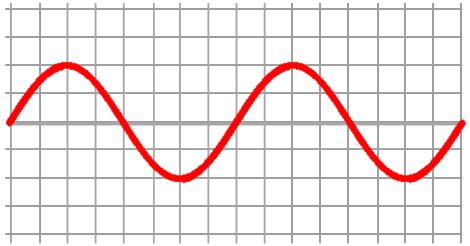
Activity 2: Frequency, Speed, and Wavelength
Question Group 5
Question 13

The diagram at the right is a snapshot in time of a wave moving along a rope. Which diagram below represents a wave vibrating with the two times the frequency and moving through the same rope (and thus having the same speed?



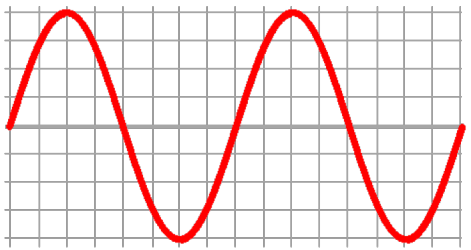


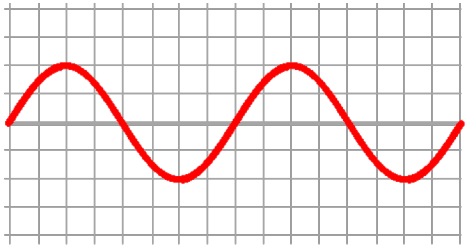


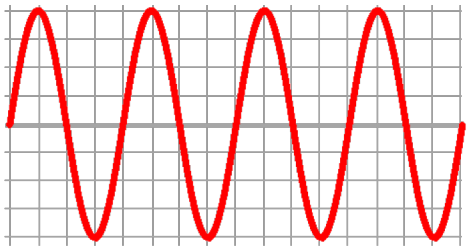


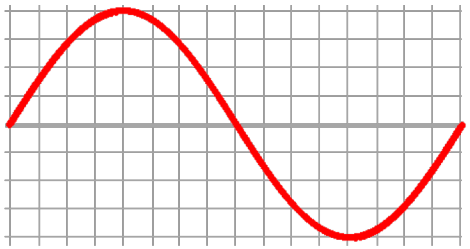
Question 14

The diagram at the right is a snapshot in time of a wave moving along a rope. Which diagram below represents a wave vibrating with the two times the frequency and moving through the same rope (and thus having the same speed?



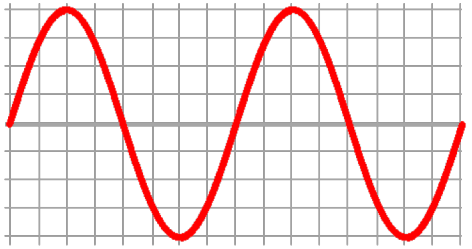


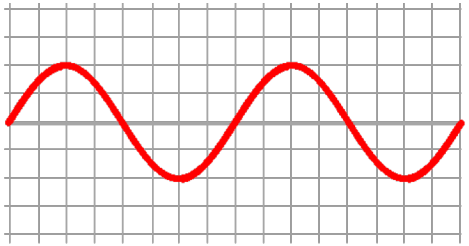


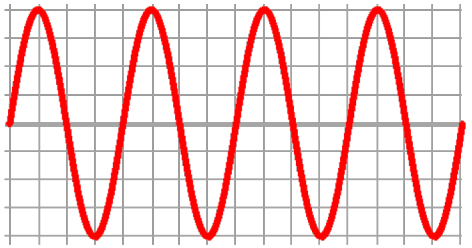


Question 15

The diagram at the right is a snapshot in time of a wave moving along a rope. Which diagram below represents a wave vibrating with the two times the frequency and moving through the same rope (and thus having the same speed?

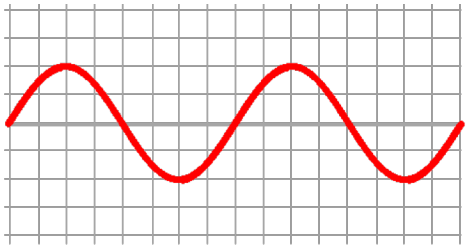


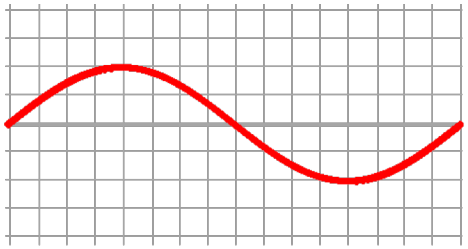


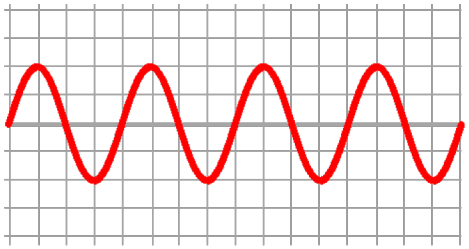


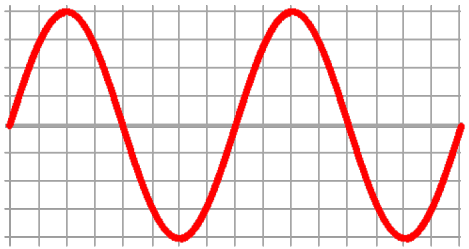
Question Group 6
Question 16

The diagram at the right is a snapshot in time of a wave moving along a rope. Which diagram below represents a wave vibrating with the one-half the frequency and moving through the same rope (and thus having the same speed?



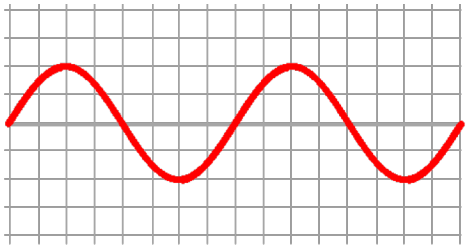


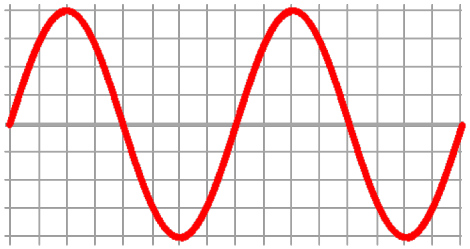


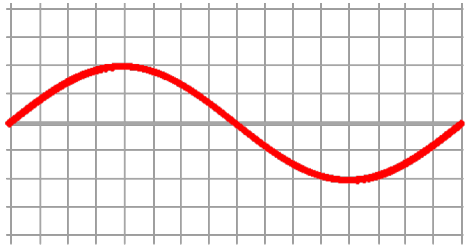


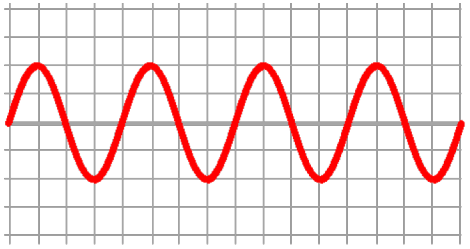
Question 17

The diagram at the right is a snapshot in time of a wave moving along a rope. Which diagram below represents a wave vibrating with the one-half the frequency and moving through the same rope (and thus having the same speed?



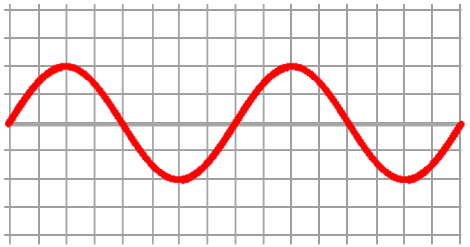


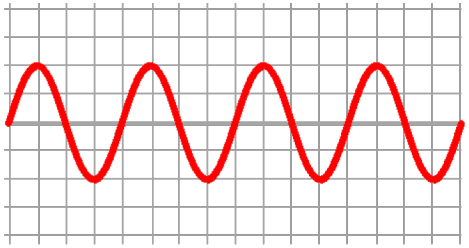


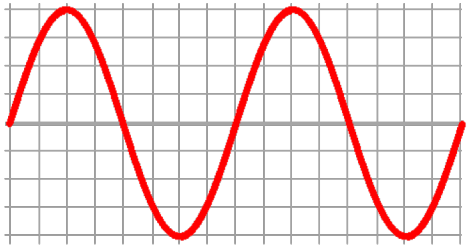


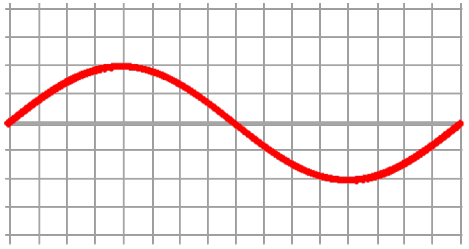
Question 18

The diagram at the right is a snapshot in time of a wave moving along a rope. Which diagram below represents a wave vibrating with the one-half the frequency and moving through the same rope (and thus having the same speed?



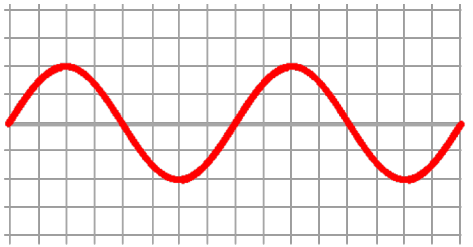


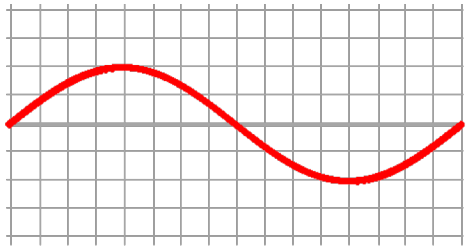


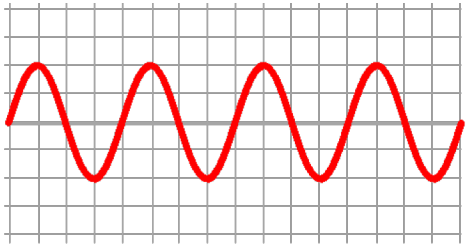


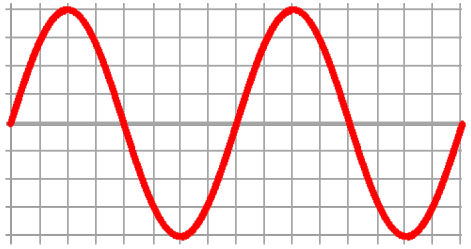
Question Group 7
Question 19

The diagram at the right is a snapshot in time of a wave moving along a rope. Which diagram below represents a wave vibrating with the same frequency and moving through a different rope with two times the speed?



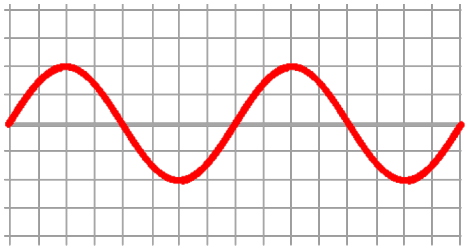


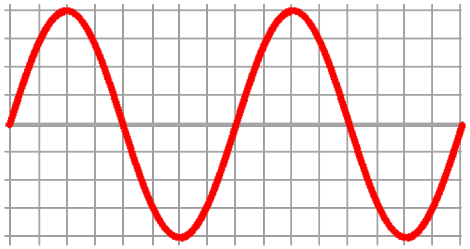


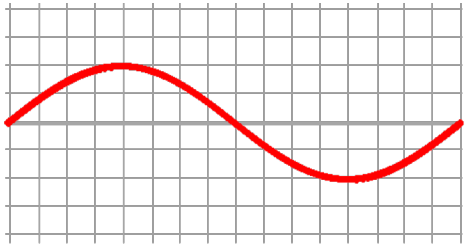


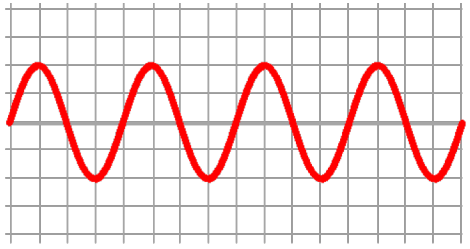
Question 20

The diagram at the right is a snapshot in time of a wave moving along a rope. Which diagram below represents a wave vibrating with the same frequency and moving through a different rope with two times the speed?



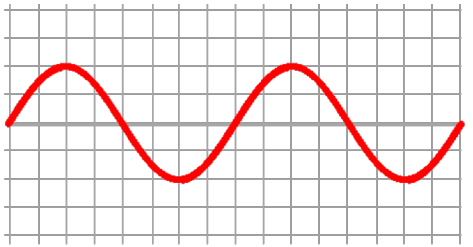


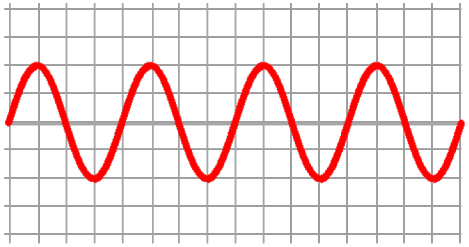


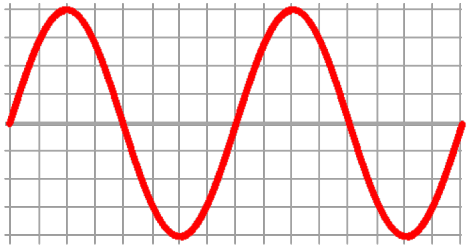


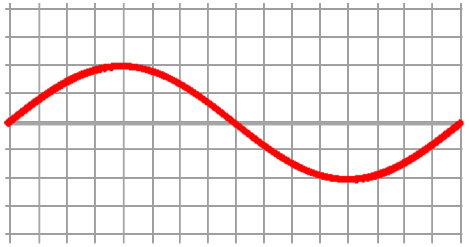
Question 21

The diagram at the right is a snapshot in time of a wave moving along a rope. Which diagram below represents a wave vibrating with the same frequency and moving through a different rope with two times the speed?



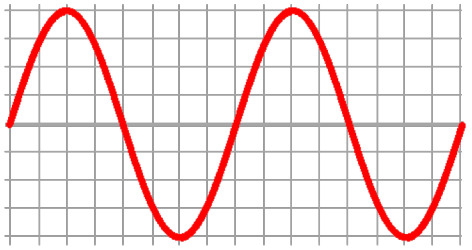


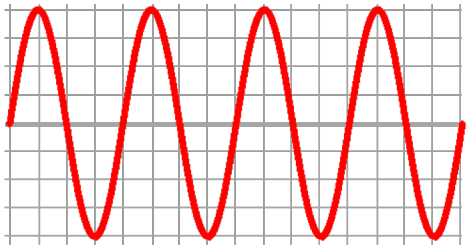


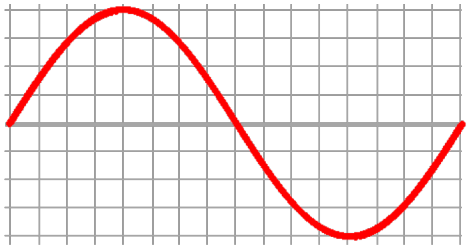


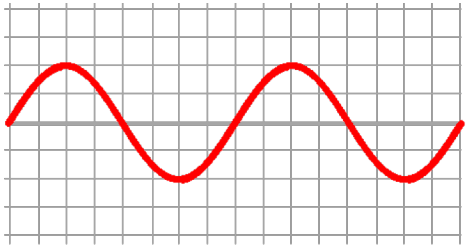
Question Group 8
Question 22

The diagram at the right is a snapshot in time of a wave moving along a rope. Which diagram below represents a wave vibrating with the same frequency and moving through a different rope with one-half the speed?



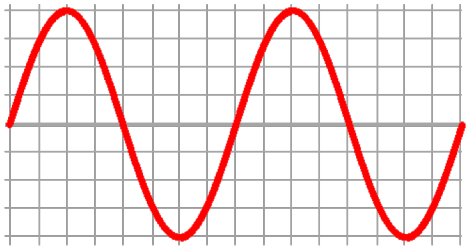


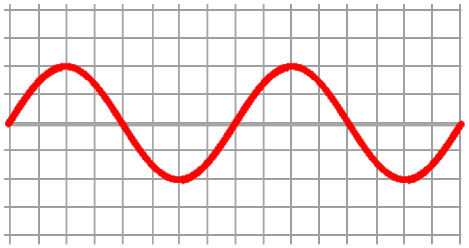


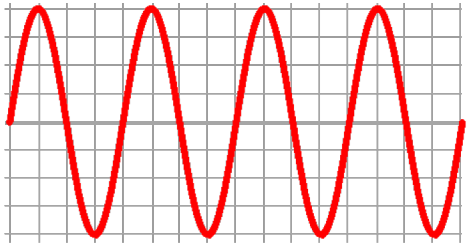


Question 23

The diagram at the right is a snapshot in time of a wave moving along a rope. Which diagram below represents a wave vibrating with the same frequency and moving through a different rope with one-half the speed.

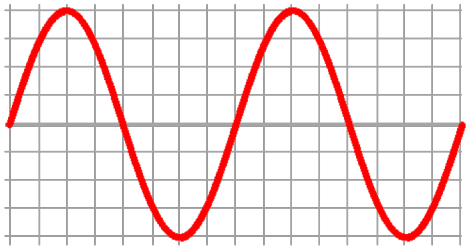


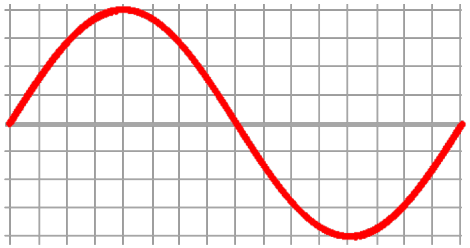


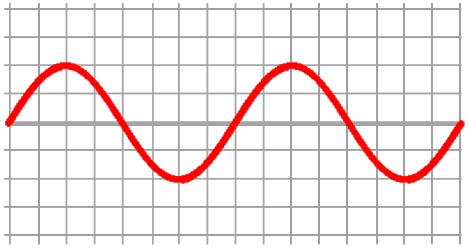


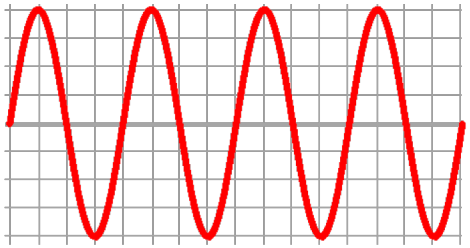
Question 24

The diagram at the right is a snapshot in time of a wave moving along a rope. Which diagram below represents a wave vibrating with the same frequency and moving through a different rope with one-half the speed?



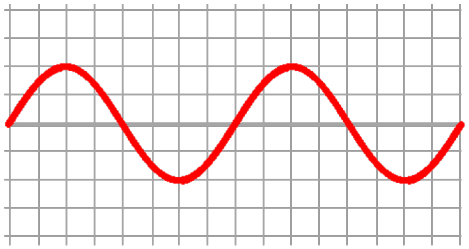


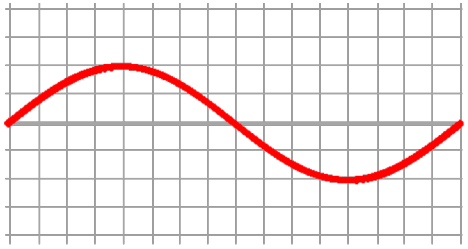


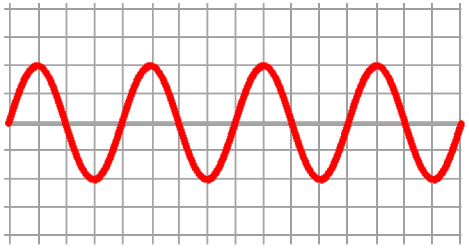


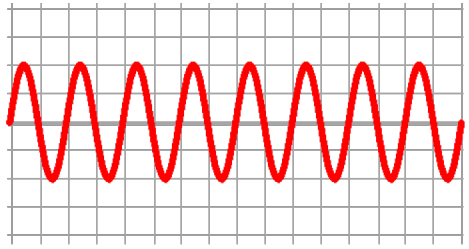
Activity 3: Speed, Tension, and Density
Question Group 9
Question 25

The diagram at the right is a snapshot in time of a wave moving along a rope. Which diagram below represents a wave with the same frequency and moving through the same rope that is pulled to four times the tension?



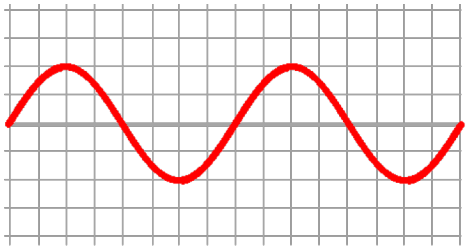


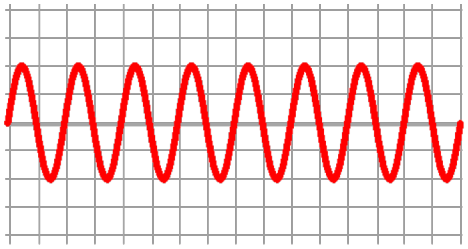


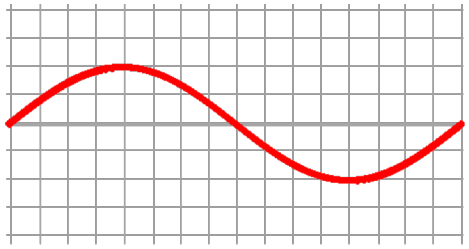


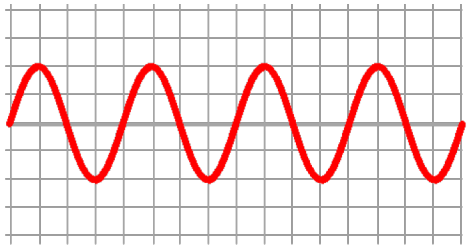
Question 26

The diagram at the right is a snapshot in time of a wave moving along a rope. Which diagram below represents a wave with the same frequency and moving through the same rope that is pulled to four times the tension?



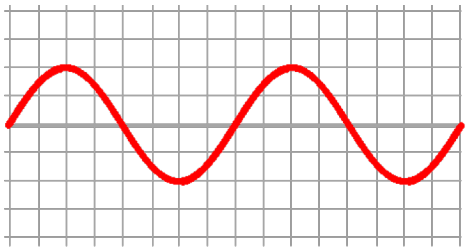


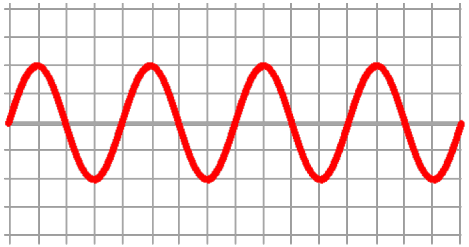


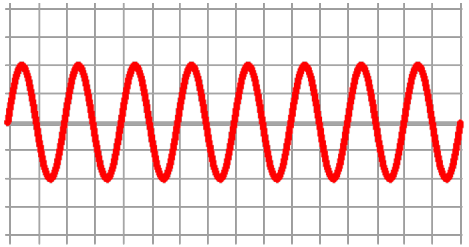


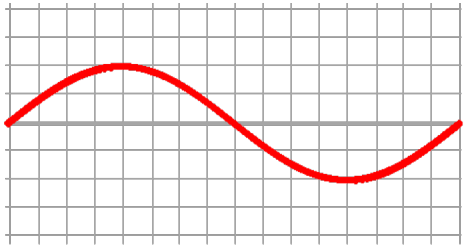
Question 27

The diagram at the right is a snapshot in time of a wave moving along a rope. Which diagram below represents a wave with the same frequency and moving through the same rope that is pulled to four times the tension?



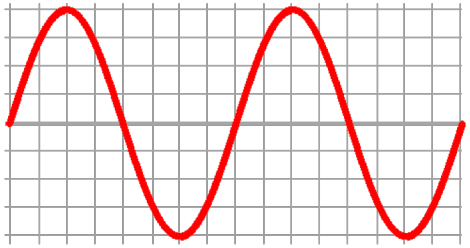


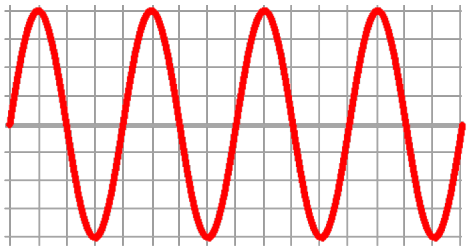


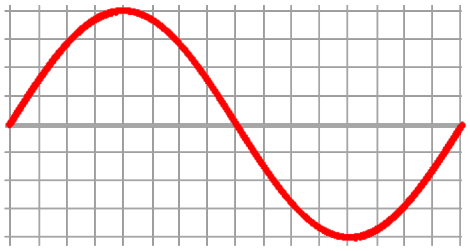


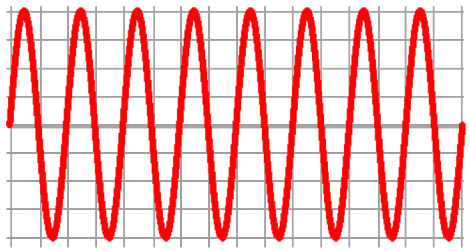
Question Group 10
Question 28

The diagram at the right is a snapshot in time of a wave moving along a rope. Which diagram below represents a wave with the same frequency and moving through the same rope that is pulled to one-fourth the tension?



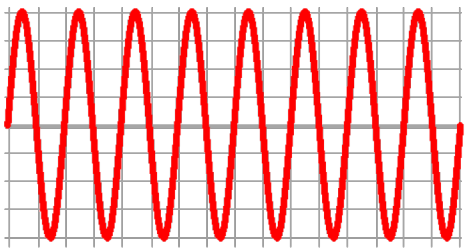


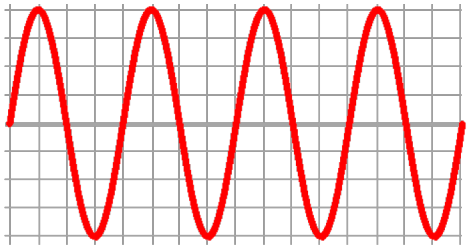




Question 29

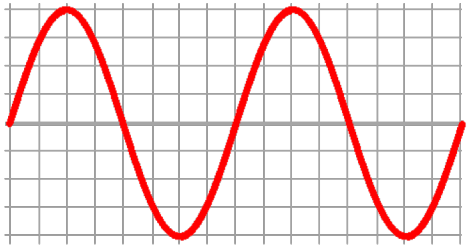
The diagram at the right is a snapshot in time of a wave moving along a rope. Which diagram below represents a wave with the same frequency and moving through the same rope that is pulled to one-fourth the tension?

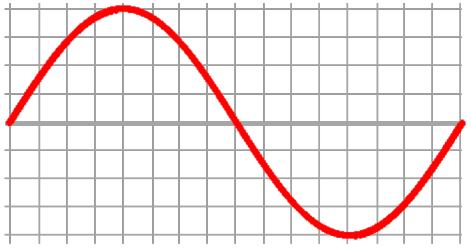


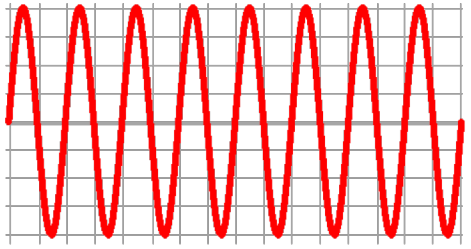


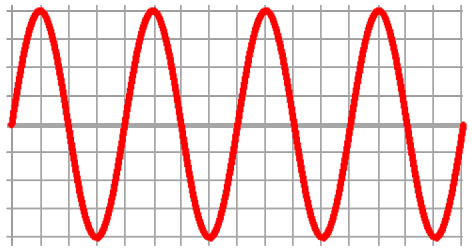
Question 30

The diagram at the right is a snapshot in time of a wave moving along a rope. Which diagram below represents a wave with the same frequency and moving through the same rope that is pulled to one-fourth the tension?



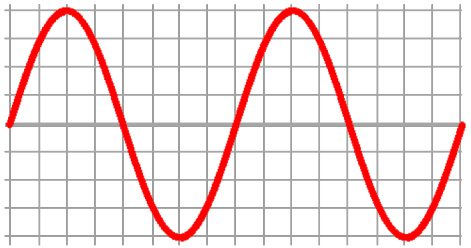


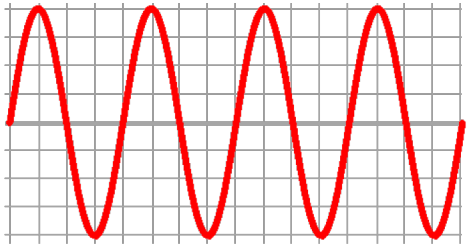


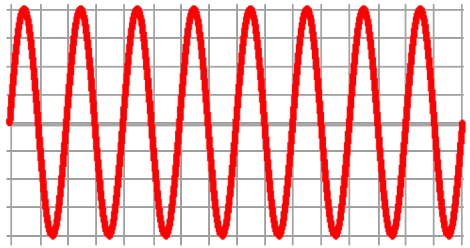


Question Group 11
Question 31

The diagram at the right is a snapshot in time of a wave moving along a rope. Which diagram below represents a wave with the same frequency but moving through a different rope having four times the linear density and pulled to the same tension?

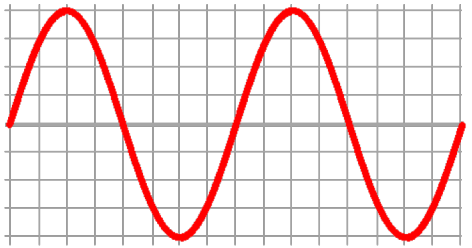


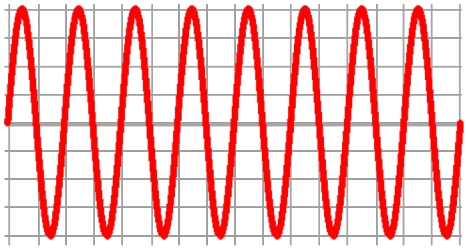


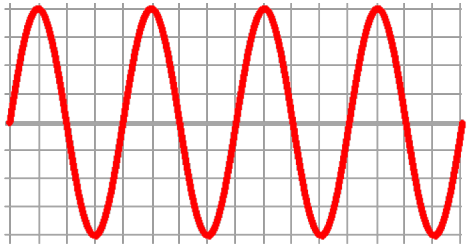


Question 32

The diagram at the right is a snapshot in time of a wave moving along a rope. Which diagram below represents a wave with the same frequency but moving through a different rope having four times the linear density and pulled to the same tension?

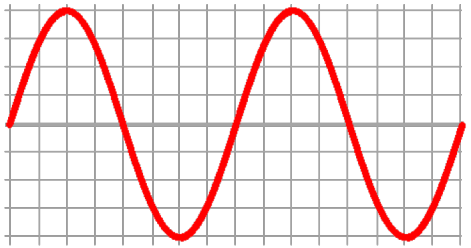


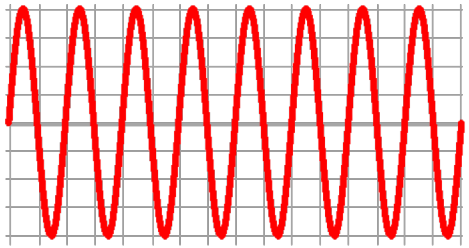


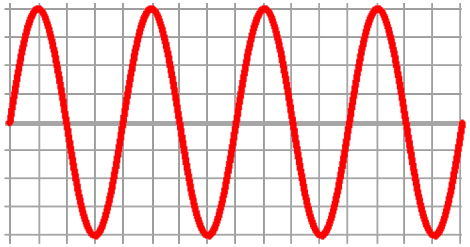


Question 33

The diagram at the right is a snapshot in time of a wave moving along a rope. Which diagram below represents a wave with the same frequency but moving through a different rope having four times the linear density and pulled to the same tension?

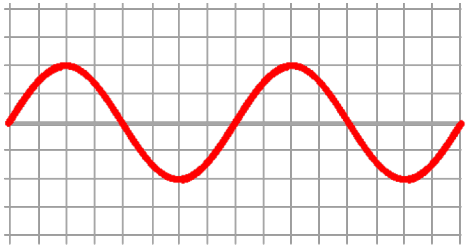


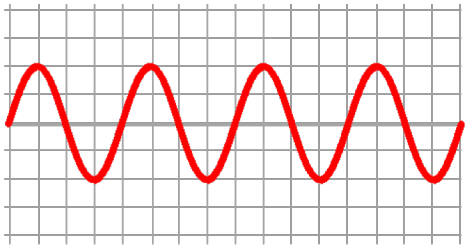


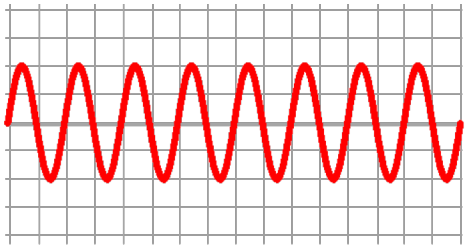


Question Group 12
Question 34

The diagram at the right is a snapshot in time of a wave moving along a rope. Which diagram below represents a wave with the same frequency but moving through a different rope having one-fourth the linear density and pulled to the same tension?

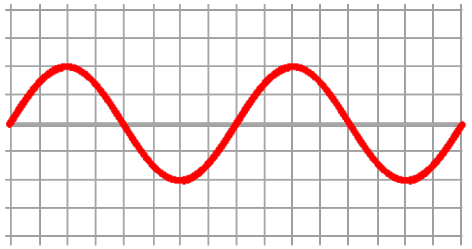


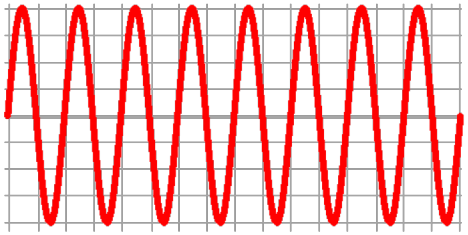


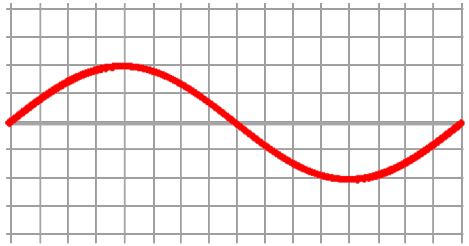


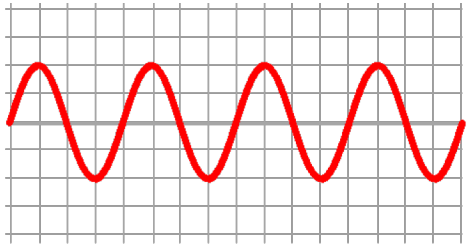
Question 35

The diagram at the right is a snapshot in time of a wave moving along a rope. Which diagram below represents a wave with the same frequency but moving through a different rope having one-fourth the linear density and pulled to the same tension?









Question 36

The diagram at the right is a snapshot in time of a wave moving along a rope. Which diagram below represents a wave with the same frequency but moving through a different rope having one-fourth the linear density and pulled to the same tension?