



# Rosary School – Marj Elhamam

Name: \_\_\_\_\_  
Grade: 7 (A,B,C,D,E)

Date: \_\_\_\_ / \_\_\_\_ / 2025

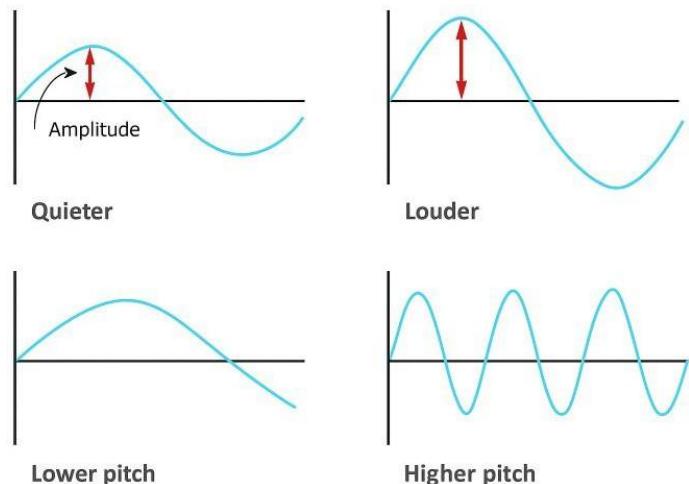
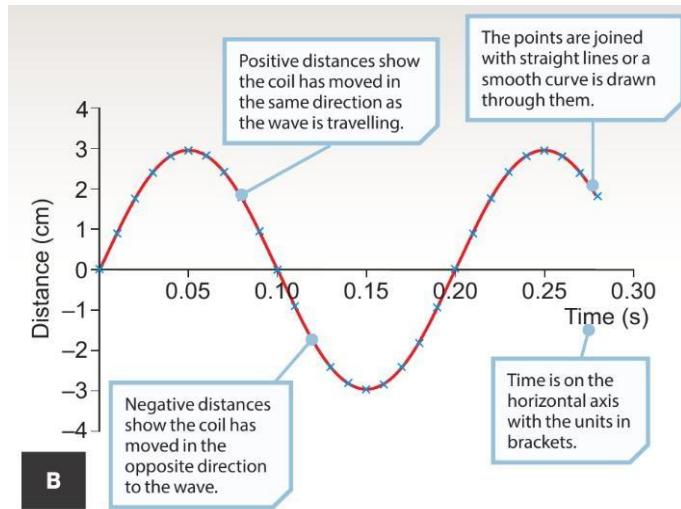
Subject : Phyhsics

## Worksheet 2

### The Oscilloscope

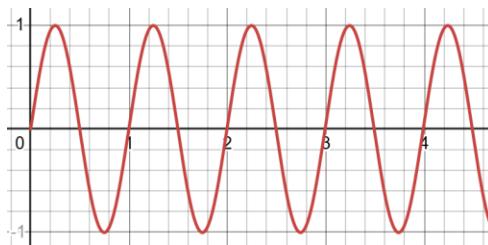
- An **oscilloscope** is an instrument that shows a picture of a sound on screen.
- An **oscilloscope** can be connected to a microphone to show sound waves. The oscilloscope trace is like a line graph.
- The **trace** is the line that appears on the screen that represents the sound wave.
- On a sound wave trace, the **amplitude** is the maximum distance from 0.
- The **frequency** is the number of complete waves (one up and down) that pass a point each second.
- In trace B, one wave takes 0.2 seconds. In each second 5 waves pass and so the frequency is 5 Hz.

### Workbook page 139 Q.3



### Question 1:

Determine the Amplitude and Frequency of the wave below.



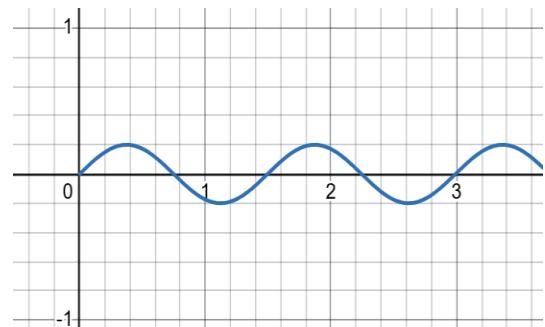
Frequency: \_\_\_\_\_

Amplitude: \_\_\_\_\_

### Question 2:

Circle the correct word between the brackets.

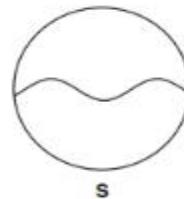
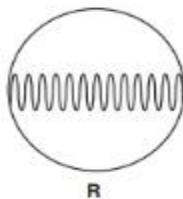
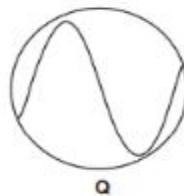
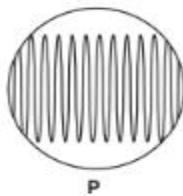
Compared to the wave in Question 1, the wave in the diagram is  
**(Louder/Softer)** and has **(Higher/Lower)** pitch.



### Question 3:

The ring tone on a mobile phone can be changed.

The figure shows the sound trace made by four sound waves on an oscilloscope screen.



Explain which sound trace from a ring tone (P, Q, R or S) will have a quietest sound with the lowest pitch.

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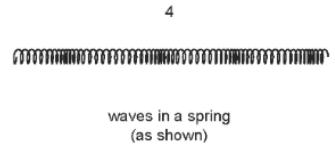
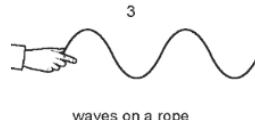
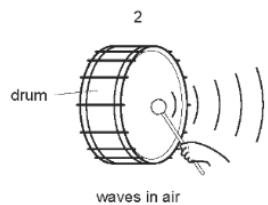
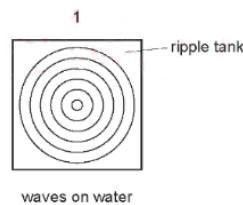
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**Question 4:**

The diagrams show examples of wave motion.

Which are longitudinal waves?

**Question 5:**

We can use graphs to represent the movement of air particles in a sound wave. The diagram represent two different sound waves.

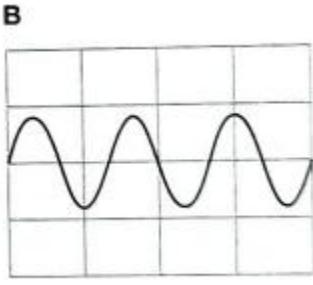
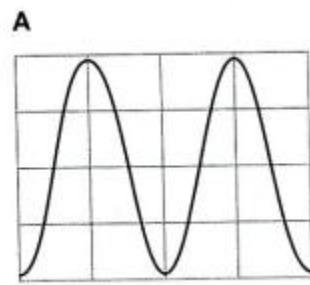
a) Which graph shows:

- (i) Particles moving only a little way as the wave passes. \_\_\_\_\_.
- (ii) The wave with the greater number of waves per second. \_\_\_\_\_.

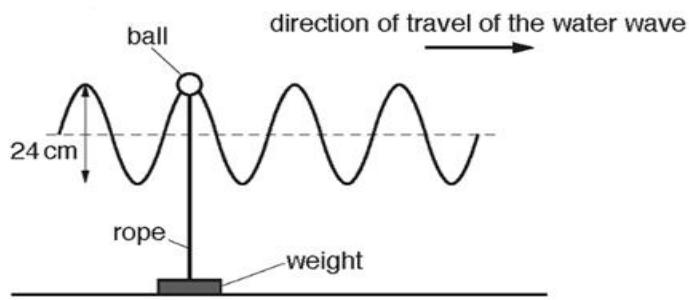
b) Complete the following sentences by crossing out the incorrect word.

Wave A has the (highest/ lowest) frequency. It will make a (higher / lower) note than wave B.

Wave A has the (largest / smallest) amplitude. It will be (louder/ quieter) than wave B.

**Question 6:**

The diagram below shows a plastic ball floating on the surface of a lake and attached by a long rope to a weight on the bottom of the lake. A water wave on the surface of the lake causes the ball to move vertically up and down.



a) Determine the amplitude of the wave. \_\_\_\_\_ cm.

b) Explain how the motion of the ball shows that the water wave is transverse.

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## Question 7:

Ultrasound waves are used to **produce images**.

This is an ultrasound image for a fetus surrounded by fluid.



1) The ultrasound wave is caused by waves bounce off the fetus.

This is an example of waves that are.

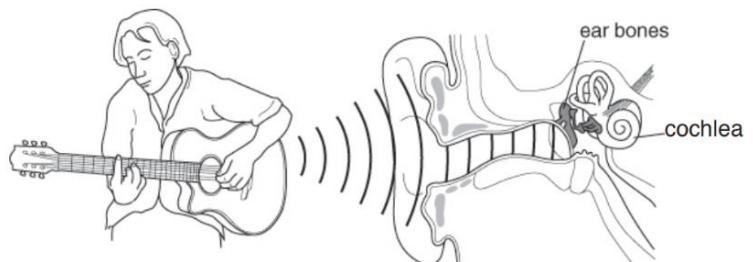
- absorbed
- reflected
- refracted
- transmitted

2) Describe **two other** uses of ultrasounds.

- i) \_\_\_\_\_
- ii)

## Question 8:

The diagram shows someone playing a guitar and shows part of an ear. The eardrum vibrates when sound waves reach it.



a. Give the function of:

(i) the ear bones:

(ii) the cochlea:

b. What happens to the eardrum if the sound reaching the ear gets louder?

a the eardrum vibrates faster

b. the eardrum vibrates slower

c. the eardrum vibrates further

d. the eardrum vibrates less