

# General Wave Properties

## Question Paper 2

Level	IGCSE
Subject	Physics (0625/0972)
Exam Board	Cambridge International Examinations (CIE)
Topic	General Physics
Sub-Topic	General Wave Properties
Booklet	Question Paper 2

**Time allowed:** 19 minutes

**Score:** /15

**Percentage:** /100

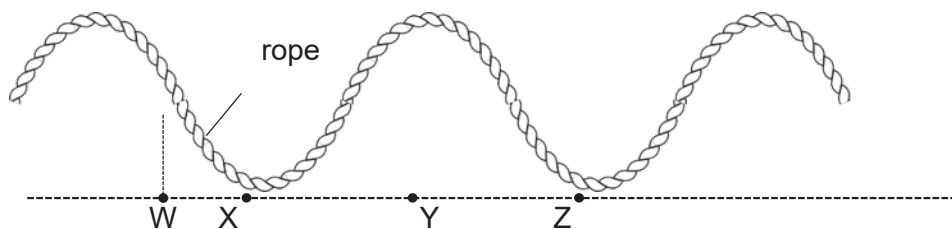
### Grade Boundaries:

9	8	7	6	5	4	3	2	1
>85%	75%	68%	60%	55%	50%	43%	35%	<30%

## Question 1

A transverse wave moves along a rope.

The diagram shows the position of the rope at one particular time.

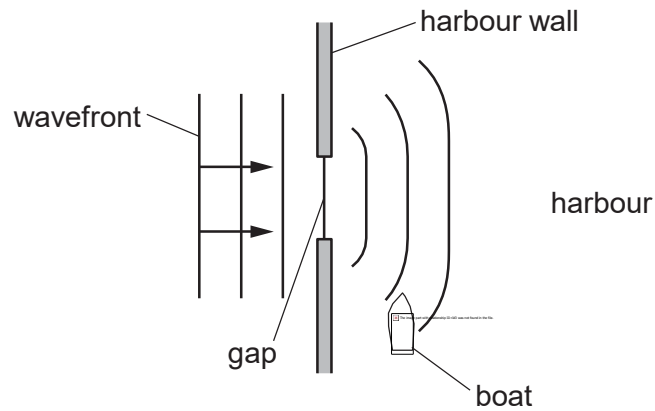


Which two labelled points are one wavelength apart?

- A W and X      B W and Z      C X and Z      D Y and Z

## Question 2

The diagram shows a water wave passing through a gap in a harbour wall. The wavefronts curve round the wall and reach a small boat in the harbour.

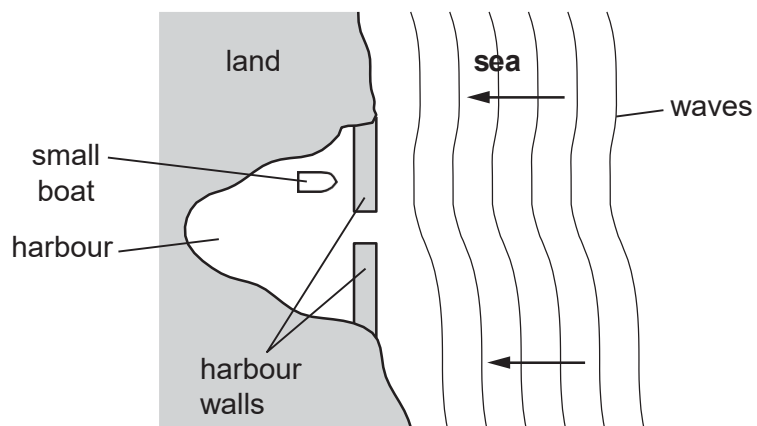


What is the name of this curving effect, and how can the gap be changed so that the wavefronts do not reach the boat?

	name of effect	change to the gap
A	diffraction	make the gap slightly bigger
B	diffraction	make the gap slightly smaller
C	refraction	make the gap slightly bigger
D	refraction	make the gap slightly smaller

### Question 3

A small boat in a harbour is protected from waves on the sea by harbour walls.



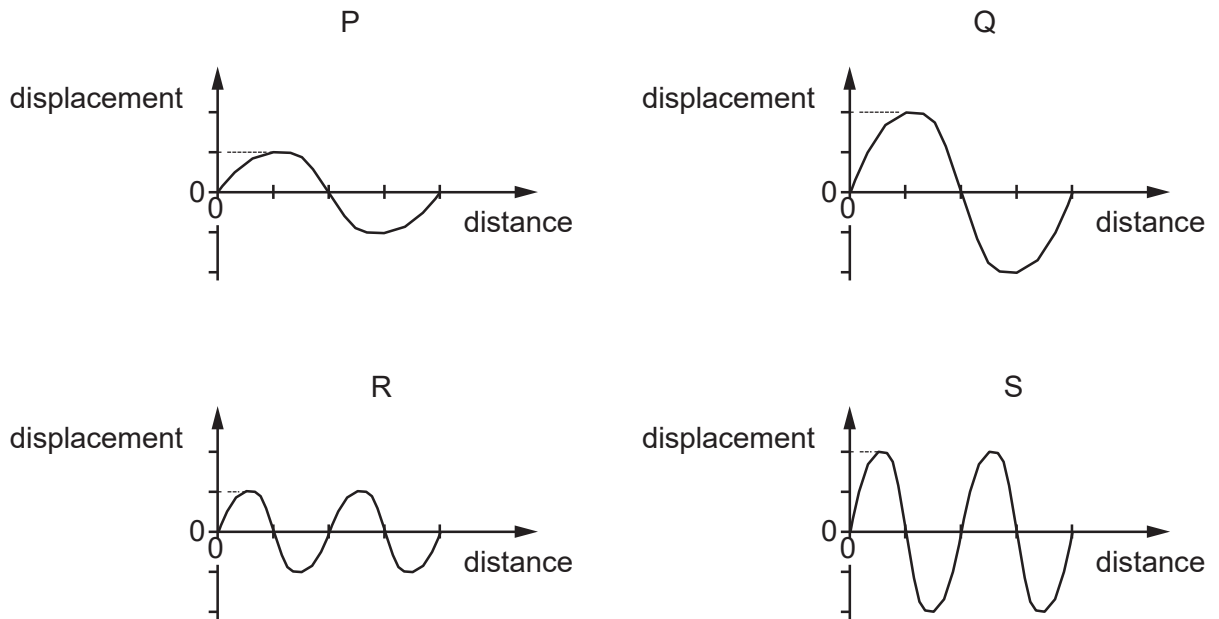
Some waves can curve round the harbour walls and reach the boat.

What is the name of this effect?

- A diffraction
- B dispersion
- C reflection
- D refraction

## Question 4

The diagram shows four waves drawn to the same scale.



Which statement is correct?

- A. The amplitude of wave P is the same as the amplitude of wave R.
- B. The amplitude of wave S is double the amplitude of wave Q.
- C. The wavelength of wave Q is double the wavelength of wave P.
- D. The wavelength of wave S is the same as the wavelength of wave Q.

## Question 5

Light waves pass from air into glass and are refracted.

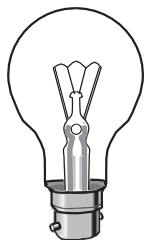
What always remains constant when this happens?

- A direction
- B frequency
- C speed
- D wavelength.

## Question 6

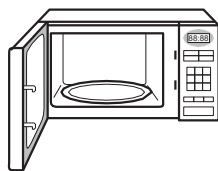
Which waves are longitudinal?

**A**



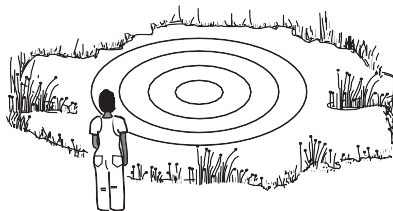
light waves  
from a lamp

**B**



microwaves  
in an oven

**C**



water waves  
on a pond

**D**



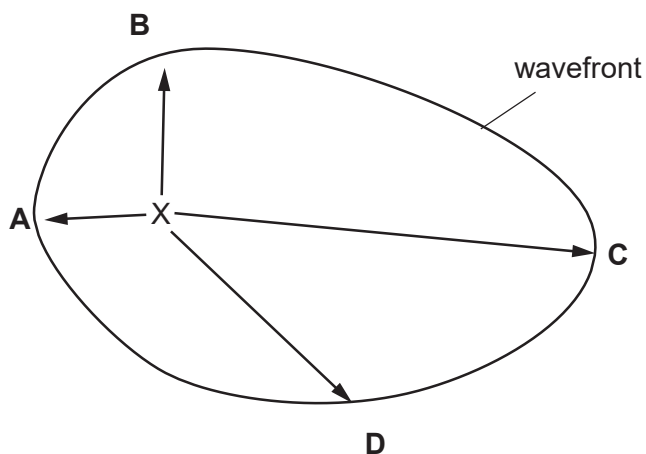
sound waves  
from a trumpet

## Question 7

Waves travel more quickly on the surface of water when the water is deep.

A stone is dropped at point X into a pool of varying depth. The diagram shows the first wavefront on the surface of the pool.

The region between X and which labelled point is likely to be the deepest?





## Question 8

Which row shows an example of a transverse wave and an example of a longitudinal wave?

	transverse	longitudinal
A	light	radio
B	radio	sound
C	sound	water
D	water	light

## Question 9

A boy throws a small stone into a pond. Waves spread out from where the stone hits the water and travel to the side of the pond.

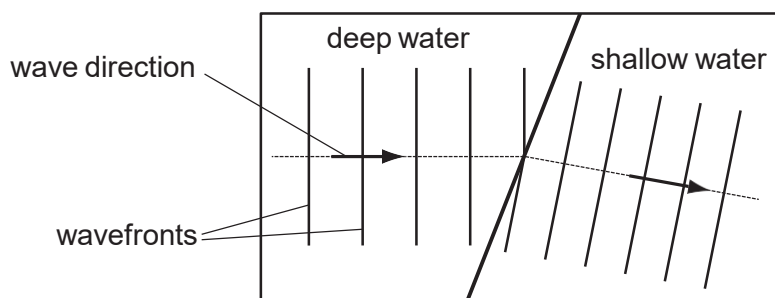
The boy notices that eight waves reach the side of the pond in a time of 5.0s.

What is the frequency of the waves?

- A 0.20Hz      B 0.63Hz      C 1.6Hz      D 40Hz

## Question 10

Water waves may be used to demonstrate refraction by making them pass into water of a different depth.



Why does the water wave change direction as it passes into the shallow water?

- A The frequency of the wave decreases.
- B The frequency of the wave increases.
- C The speed of the wave decreases.
- D The speed of the wave increases.

## Question 11

What is the unit of wavelength?

- A. hertz
- B. metre
- C. metre per second
- D. Second.

## Question 12

Which row correctly describes light waves and radio waves?

	light waves	radio waves
A	longitudinal	longitudinal
B	longitudinal	transverse
C	transverse	longitudinal
D	transverse	transverse

## Question 13

Water waves can be used to show reflection, refraction and diffraction.

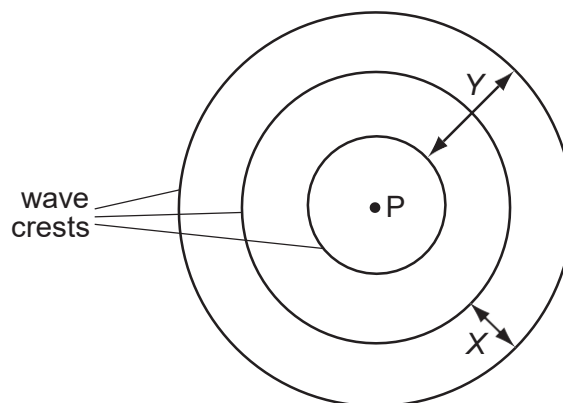
For each of these, which row shows whether or not the speed of the water waves changes?

	reflection	refraction	diffraction
A	no	no	yes
B	no	yes	no
C	yes	no	no
D	yes	yes	yes

## Question 14

A vertical stick is dipped up and down in water at P.

In two seconds, three wave crests are produced on the surface of the water.



Which statement is correct?

- A Distance  $X$  is the amplitude of the waves.
- B Distance  $Y$  is the wavelength of the waves.
- C Each circle represents a wavefront.
- D The frequency of the waves is 3Hz.

## Question 15

Which of these waves is longitudinal?

- A. infra-red
- B. radio
- C. sound
- D. water