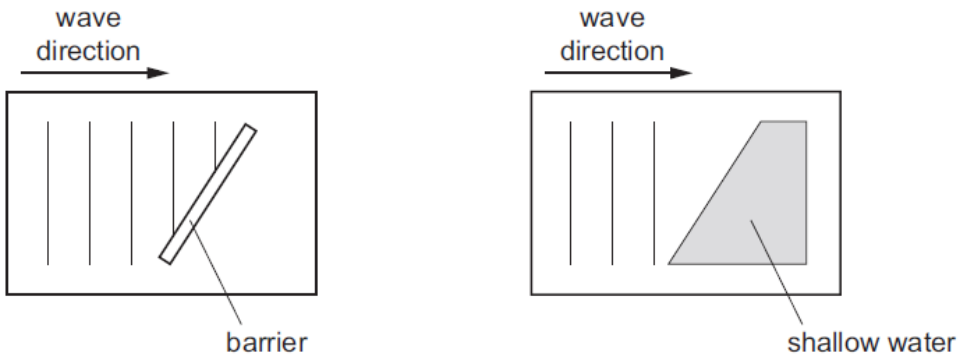
Waves – 2022 November IGCSE 0625

1. Nov/2022/Paper_11,21/No.18

The diagrams show two sets of wavefronts in a ripple tank.



A student makes two statements about the waves.

1 When the waves reflect from the barrier the direction changes but the wavelength remains the same.

2 When the waves refract as they enter the shallow water the direction remains the same, but the wavelength changes.

Which statements are correct?

A statement 1 and statement 2

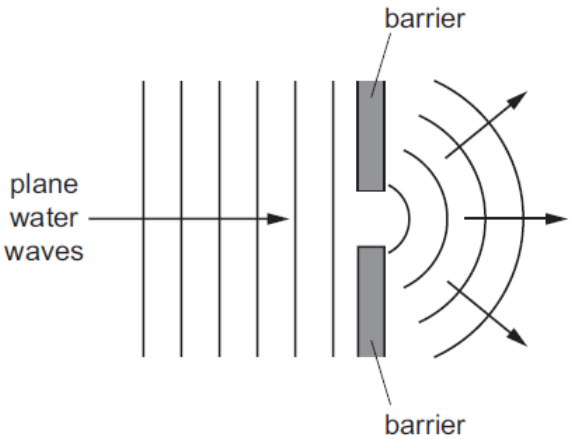
B statement 1 only

C statement 2 only

D neither statement 1 nor statement 2

2. Nov/2022/Paper_12/No.18

The diagram shows plane water waves in a ripple tank passing through a gap between two barriers and spreading out.



Which name is given to this effect?

A diffraction

B reflection

C refraction

D total internal reflection

3. Nov/2022/Paper_13/No.18

Wavefronts are incident on a boundary.

What is needed for the wave to refract at the boundary?

A a shiny surface at the boundary

B a small gap in the boundary

C different mediums either side of the boundary in which the frequency of the wave is different

D different mediums either side of the boundary in which the speed of the wave is different

4. Nov/2022/Paper_21/No.17

A wave source produces 3000 crests every minute. The wave has a speed of 300 m/s.

What is the wavelength of the wave?

A 0.10 m **B** 0.17 m **C** 6.0 m **D** 10.0 m

5. Nov/2022/Paper_22/No.17

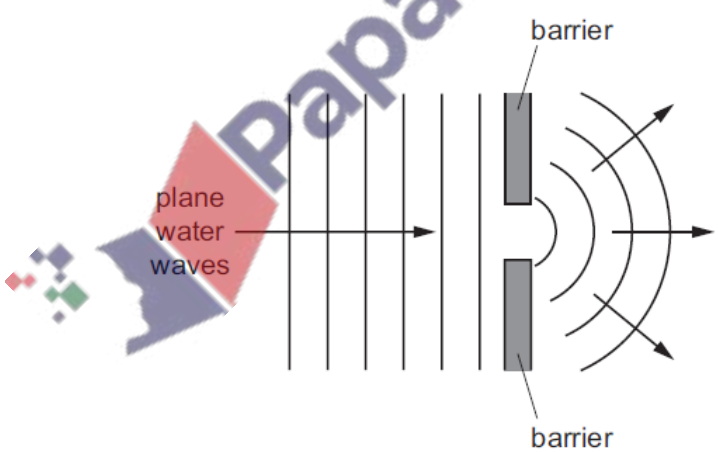
A sound wave travels from air into water.

Which row describes what happens to the frequency and the wavelength of the wave?

	frequency	wavelength
A	decreases	increases
B	decreases	stays the same
C	stays the same	decreases
D	stays the same	increases

6. Nov/2022/Paper_22/No.18

The diagram shows plane water waves in a ripple tank passing through a gap between two barriers and spreading out.



Which name is given to this effect?

A diffraction

B reflection

C refraction

D total internal reflection

7. Nov/2022/Paper_23/No.17

A passing boat causes a floating object on a lake to bob up and down 18 times in 12 s. The wavelength of the wave created by the boat is 48 cm.

What is the velocity of these water waves?

A 32 cm / s **B** 72 cm / s **C** 576 cm / s **D** 864 cm / s

8. Nov/2022/Paper_23/No.18

Wavefronts are incident on a boundary.

What is needed for the wave to refract at the boundary?

A a shiny surface at the boundary

B a small gap in the boundary

C different mediums either side of the boundary in which the frequency of the wave is different

D different mediums either side of the boundary in which the speed of the wave is different

9. Nov/2022/Paper_43/No.6

Fig. 6.1 shows wave crests and the direction of travel for a water wave approaching a barrier in a large ripple tank.

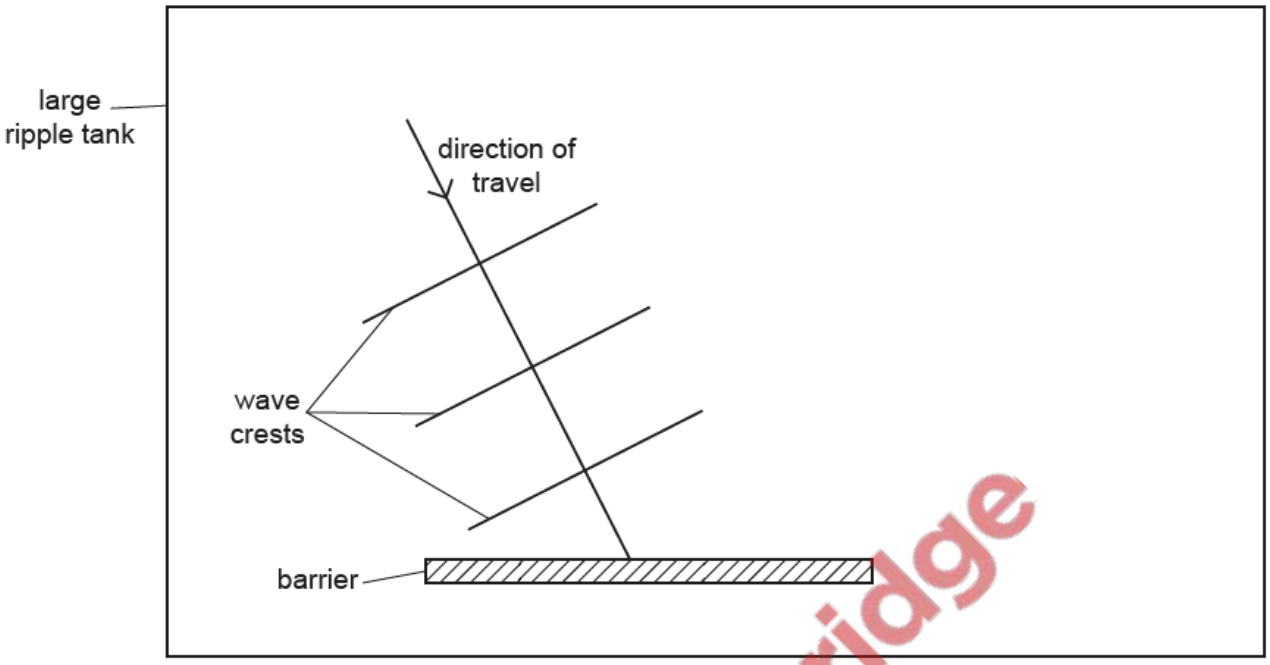


Fig. 6.1

The wavelength of the wave is 1.6 cm.

(a) On Fig. 6.1, draw:

(i) the direction of travel of the reflected wave [1]

(ii) **three** successive reflected wave crests. [2]

(b) Fig. 6.2 shows an identical wave approaching a barrier with a gap of 1.3 cm.

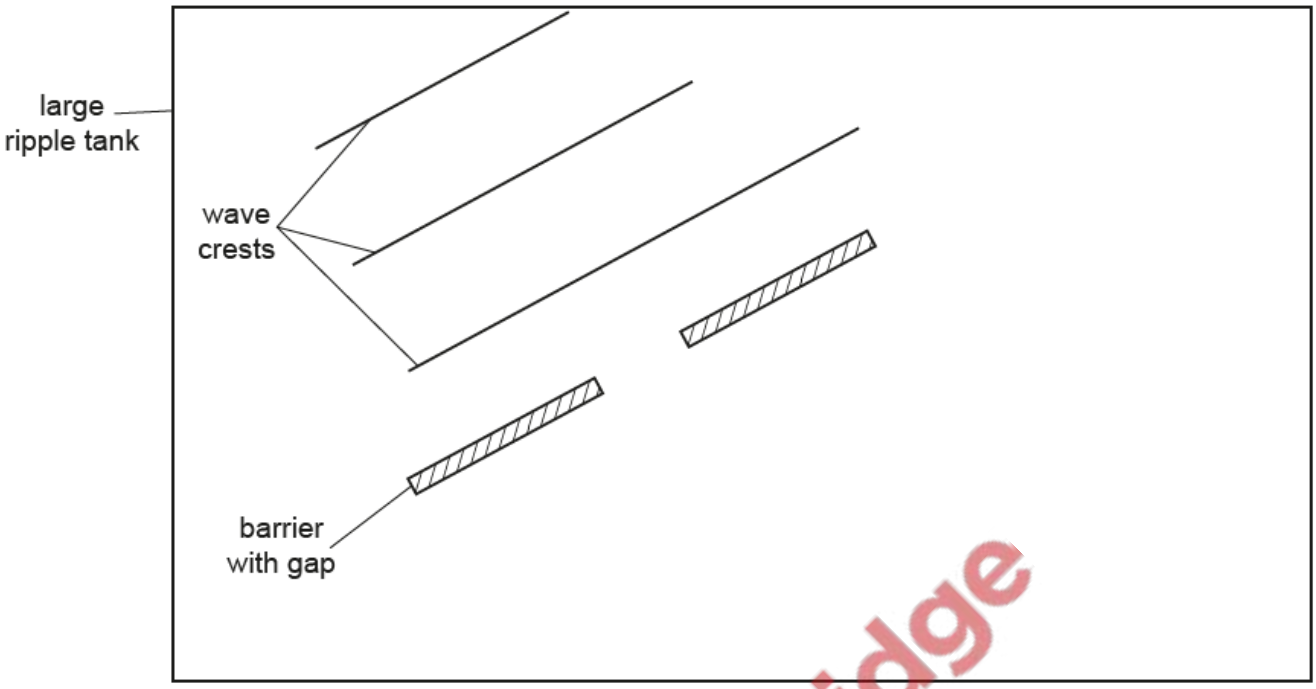


Fig. 6.2

On Fig. 6.2, draw **three** successive wave crests after they pass through the gap in the barrier. [3]

(c) The frequency of the wave is 4.0 Hz.

Calculate the speed of the wave.

speed = ... [2]

[Total: 8]