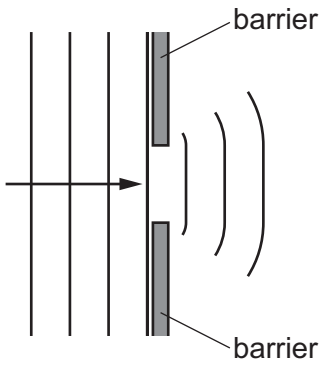
28 A wave on the surface of water passes through a gap between two barriers and is diffracted, as shown.



What happens when the frequency of the wave is halved?

A Less diffraction is observed.

B More diffraction is observed.

C There is no diffraction.

D The same amount of diffraction is observed.

29 Observable interference fringes are produced using light from a double slit. The intensity of the light emerging from each slit is initially the same.

The intensity of the light emerging from one of the slits is now reduced.

How does this affect the interference pattern?

A The bright fringes and the dark fringes all become brighter.

B The bright fringes and the dark fringes all become darker.

C The bright fringes become brighter and the dark fringes become darker.

D The bright fringes become darker and the dark fringes become brighter.

30 A diffraction grating has 4.00×10^5 lines per metre. A beam of light of wavelength 589×10^{-9} m is incident normally on the diffraction grating.

What is the angle between the second-order maximum and the direction of the incident beam of light?

A 13.6° **B** 27.3° **C** 28.1° **D** 56.2°