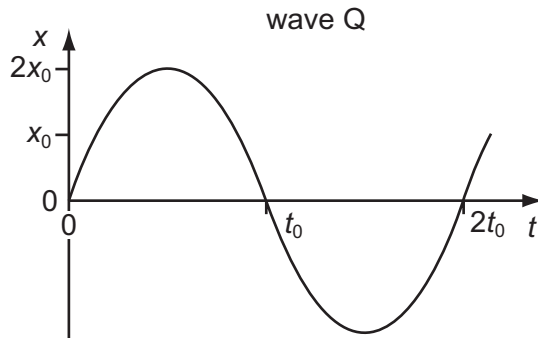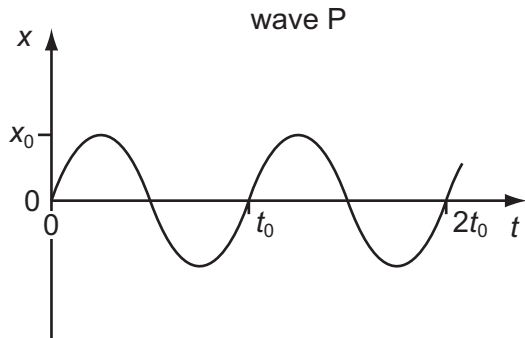24 The intensity of a progressive wave is proportional to the square of the amplitude of the wave. It is also proportional to the square of the frequency.

The variation with time t of displacement x of particles in a medium, when two progressive waves P and Q pass separately through the medium, are shown on the graphs.

The intensity of wave P is I_0.

What is the intensity of wave Q?

A $\frac{1}{2}I_0$ **B** I_0 **C** $8I_0$ **D** $16I_0$