

26 Two waves, P and Q, meet at a point X and superpose.

Initially, the two waves meet at X in phase (zero phase difference) so that the resultant wave has an amplitude of 14.0 cm at that point.

The phase difference between the two waves is then changed so that they meet at X with a phase difference of 180° . The resultant wave now has an amplitude of 4.0 cm at X.

What is the amplitude of one of the waves at point X?

A 2.0 cm

B 5.0 cm

C 10 cm

D 18 cm

27 A student uses a diffraction grating to study the interference pattern. The student finds that