12 The total number of forces acting on an object is two. The object is in equilibrium.
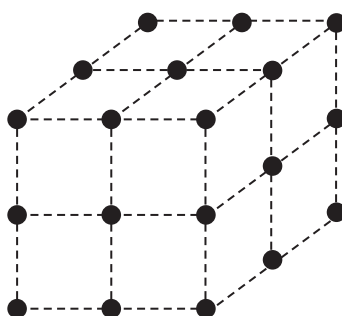
Which statements about the forces are correct?

1   The two forces must have equal magnitudes.

2   The two forces must act in the same direction.

3   The two forces must act through the same point.

A   1 and 2 only   **B**   1 and 3 only   **C**   2 and 3 only   **D**   1, 2 and 3

13 The diagram shows the arrangement of atoms in a particular crystal.

Each atom is at the corner of a cube.

The mass of each atom is 3.5×10^{-25} kg. The density of the crystal is 9.2×10^3 kg m^{-3}.

What is the shortest distance between the centres of two adjacent atoms?

A 3.8×10^{-29} m

B 6.2×10^{-15} m

C 3.4×10^{-10} m

D 3.0×10^{-9} m

14 Four measuring cylinders are filled with the same liquid to the heights shown.

At which position is the pressure the greatest?