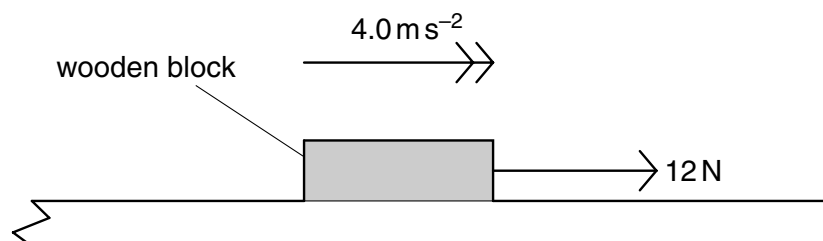10 A wooden block of mass 0.60 kg is on a rough horizontal surface. A force of 12 N is applied to the block and it accelerates at 4.0 m s^{-2}.

What is the magnitude of the frictional force acting on the block?

A   2.4 N

B   9.6 N

C   14 N

D   16 N

11 A body, initially at rest, explodes into two masses M_1 and M_2 that move apart with speeds v_1 and v_2 respectively.

What is the ratio $\dfrac{v_1}{v_2}$?

A $\dfrac{M_1}{M_2}$ B $\dfrac{M_2}{M_1}$ C $\left(\dfrac{M_1}{M_2}\right)^{\frac{1}{2}}$ D $\left(\dfrac{M_2}{M_1}\right)^{\frac{1}{2}}$

12 A submarine descends vertically at constant velocity. The three forces acting on the submarine are viscous drag, upthrust and weight.

Which relationship between their magnitudes is correct?

A   weight < drag

B   weight = drag

C   weight < upthrust

D   weight > upthrust