**8** A man stands in a lift that is accelerating vertically downwards, as shown.
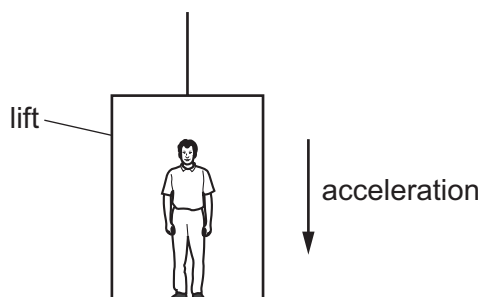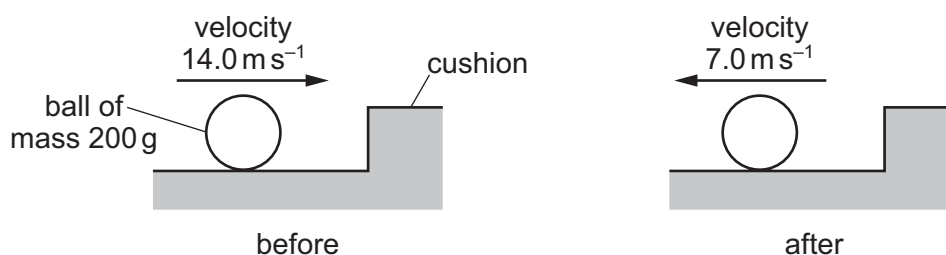


Which statement describes the force exerted by the man on the floor?

**A** It is equal to the weight of the man.

**B** It is greater than the force exerted by the floor on the man.

**C** It is less than the force exerted by the floor on the man.

**D** It is less than the weight of the man.

**9** A snooker ball of mass 200 g hits the cushion of a snooker table at right-angles with a speed of 14.0 m s$^{-1}$.

The ball rebounds with half of its initial speed. The ball is in contact with the cushion for 0.60 s.



What is the average force exerted on the ball by the cushion?

**A** 2.3 N          **B** 7.0 N          **C** 2300 N          **D** 7000 N

**10** Two railway trucks of masses $m$ and $3m$ move towards each other in opposite directions with speeds $2v$ and $v$ respectively. These trucks collide and stick together.

What is the speed of the trucks after the collision?

**A** $\dfrac{v}{4}$          **B** $\dfrac{v}{2}$          **C** $v$          **D** $\dfrac{5v}{4}$