10 What is a reasonable estimate of the average gravitational force acting on a fully grown woman standing on the Earth?

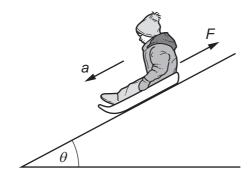**A** 60 N   **B** 250 N   **C** 350 N   **D** 650 N

11 A molecule of mass m travelling at speed v hits a wall in a direction perpendicular to the wall. The collision is elastic.

What are the changes in the momentum and in the kinetic energy of the molecule caused by the collision?

	change in momentum	change in kinetic energy
A	0	0
B	0	mv^2
C	$2mv$	0
D	mv^2	0

12 A child on a sledge slides down a hill with acceleration a. The hill makes an angle θ with the horizontal.

The total mass of the child and the sledge is m. The acceleration of free fall is g.

What is the friction force F?

A $m(g\cos\theta - a)$

B $m(g\cos\theta + a)$

C $m(g\sin\theta - a)$

D $m(g\sin\theta + a)$