8 An astronaut has a weight of 660 N when she is standing on the Earth's surface.

The acceleration of free fall on the surface of Mars is $3.71 \, \text{m s}^{-2}$.

What would be the weight of the astronaut if she stood on the surface of Mars?

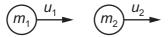
A 67.3 N

B 178 N

C 250 N

D 660 N

9 A mass m_1 travelling with speed u_1 collides with a mass m_2 travelling with speed u_2 in the same direction. After the collision, mass m_1 has speed v_1 and mass m_2 has speed v_2 in the same direction. The collision is perfectly elastic.







before the collision

after the collision

Which equation is **not** correct?

A
$$m_1u_1^2 - m_1v_1^2 = m_2v_2^2 - m_2u_2^2$$

B
$$v_2 + u_2 = v_1 + u_1$$

C
$$m_1(u_1-v_1)=m_2(v_2-u_2)$$

D
$$m_1(u_1-v_1)^2=m_2(u_2-v_2)^2$$