15 What is the expression used to **define** power?

A $\frac{\text{energy output}}{\text{energy input}}$

B energy x time taken

C force x velocity

D $\frac{\text{work done}}{\text{time taken}}$

16 A ball is thrown vertically upwards.

Neglecting air resistance, which statement is correct?

A The kinetic energy of the ball is greatest at the greatest height attained.

B By the principle of conservation of energy, the total energy of the ball is constant throughout its motion.

C By the principle of conservation of momentum, the momentum of the ball is constant throughout its motion.

D The potential energy of the ball increases uniformly with time during the ascent.

17 Car X is travelling at half the speed of car Y. Car X has twice the mass of car Y.

Which statement is correct?

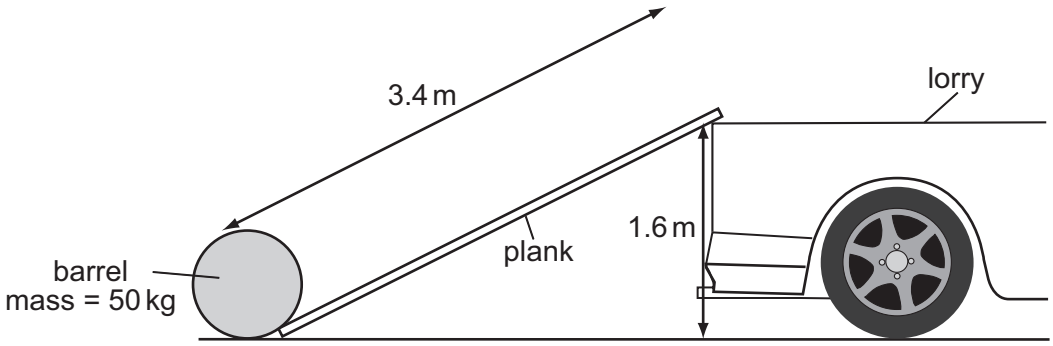
A Car X has half the kinetic energy of car Y.

B Car X has one quarter of the kinetic energy of car Y.

C Car X has twice the kinetic energy of car Y.

D The two cars have the same kinetic energy.

18 A barrel of mass 50 kg is loaded onto the back of a lorry 1.6 m high by pushing it up a smooth plank 3.4 m long.



What is the minimum work done?

A 80 J **B** 170 J **C** 780 J **D** 1700 J