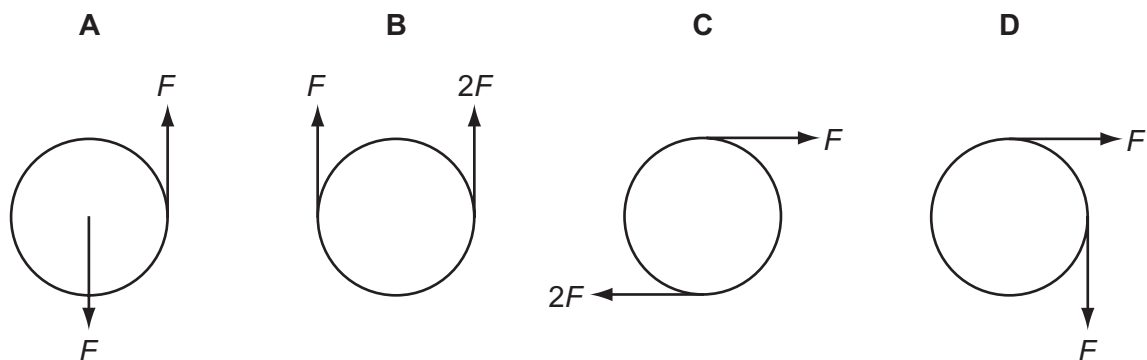
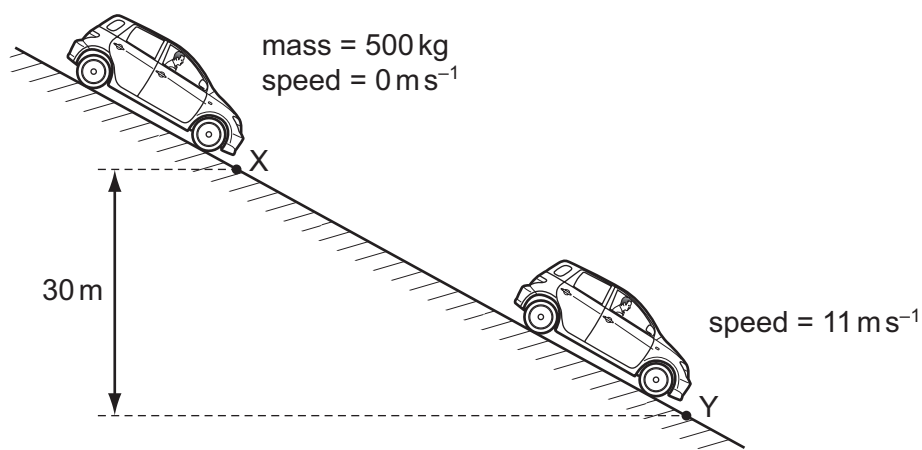


15 Which pair of forces acts only as a couple on the circular object?



16 A car of mass 500 kg is at rest at point X on a slope, as shown.

The car's brakes are released and the car rolls down the slope with its engine switched off. At point Y the car has moved through a vertical height of 30 m and has a speed of 11 m s^{-1} .



What is the energy dissipated by frictional forces when the car moves from X to Y?

- A $3.0 \times 10^4 \text{ J}$ B $1.2 \times 10^5 \text{ J}$ C $1.5 \times 10^5 \text{ J}$ D $1.8 \times 10^5 \text{ J}$

17 In which situation is **no** work done?

- A The air in a bicycle tyre is released because of a puncture.
 B A ball is dropped and falls to the ground.
 C A box moves at constant speed across a smooth horizontal surface.
 D A crane lifts a steel girder at constant speed.