

- 3 (a) State what is meant by *work done* on a body.

[1]

- (b) A system of two bodies A and B are connected by an inextensible cord over a frictionless pulley and are resting on inclined planes as shown in Fig 3.1. Body A of mass 2.00 kg and body B of mass 5.00 kg move in the directions as indicated, by a distance of 0.500 m each and experiences frictional force of 3.00 N and 5.00 N respectively.

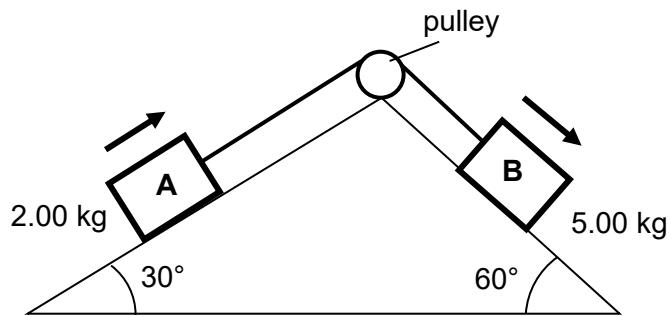


Fig 3.1

- (i) Calculate the total work done against the frictional forces.

$$\text{work done} = \dots \text{J} [1]$$

- (ii) Determine the final speed of the system after travelling 0.500 m.

final speed = m s⁻¹ [3]

- (iii) If this experiment is conducted in a laboratory in the moon where the acceleration due to gravity, g is reduced to 20%, deduce and explain if the two bodies will still move. Assuming the maximum frictional forces have the same values as given in (b).

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[2]

[Total: 7]

