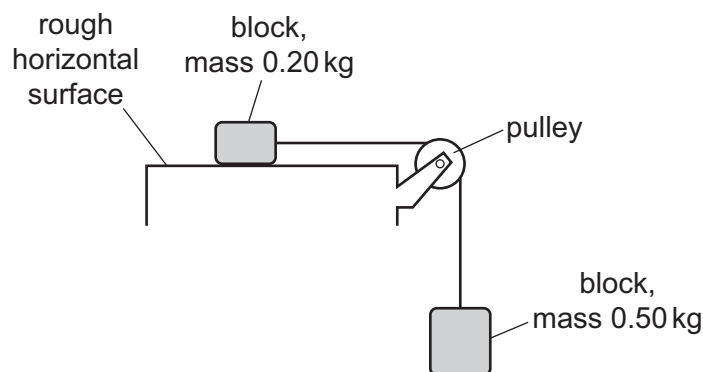


- 7 Two blocks, of mass 0.20 kg and 0.50 kg, are connected by a light inextensible string that passes over a frictionless pulley.



The blocks are initially held stationary. The block of mass 0.20 kg rests on a rough horizontal surface.

The block of mass 0.50 kg is suspended in air. Air resistance is negligible.

When the blocks are released, they have an acceleration of magnitude  $2.0 \text{ m s}^{-2}$ .

What is the magnitude of the frictional force between the block of mass 0.20 kg and the rough surface?

- A** 3.5 N                      **B** 3.9 N                      **C** 4.5 N                      **D** 6.3 N

- 8 A resultant force causes an object to accelerate.

What is equal to the resultant force?

- A** the acceleration of the object per unit mass  
**B** the change in kinetic energy of the object per unit time  
**C** the change in momentum of the object per unit time  
**D** the change in velocity of the object per unit time

- 9 An object falls from a stationary helicopter and reaches terminal velocity.

What happens to the acceleration of the object between leaving the helicopter and reaching terminal velocity?

- A** It decreases to  $9.81 \text{ m s}^{-2}$ .  
**B** It decreases to zero.  
**C** It increases to  $9.81 \text{ m s}^{-2}$ .  
**D** It remains constant at  $9.81 \text{ m s}^{-2}$ .