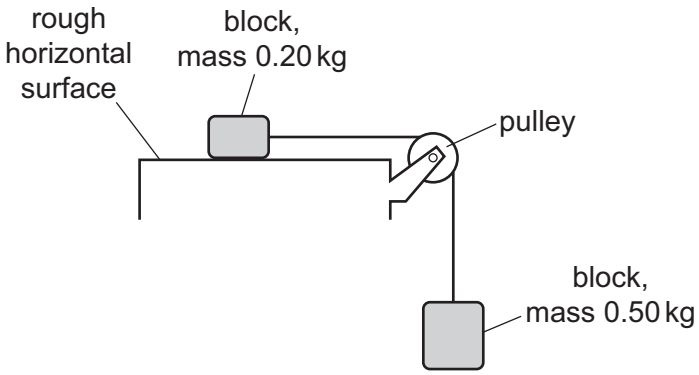
7 Two blocks, of mass 0.20 kg and 0.50 kg, are connected by a light inextensible string that passes over a frictionless pulley.



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 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 m s^{-2}.

B It decreases to zero.

C It increases to 9.81 m s^{-2}.

D It remains constant at 9.81 m s^{-2}.