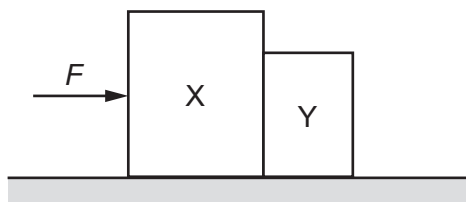


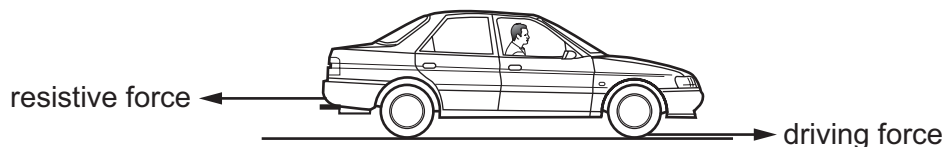
- 5 How can the acceleration of an object be determined?
- A from the area under a displacement–time graph
 - B from the area under a velocity–time graph
 - C from the gradient of a displacement–time graph
 - D from the gradient of a velocity–time graph
- 6 A sprinter takes a time of 11.0 s to run a 100 m race. She first accelerates uniformly from rest, reaching a speed of 10 m s^{-1} . She then runs at a constant speed of 10 m s^{-1} until the finish line.
- What is the uniform acceleration of the sprinter for the first part of the race?
- A 0.5 m s^{-2} B 0.91 m s^{-2} C 1.7 m s^{-2} D 5.0 m s^{-2}
- 7 A single horizontal force F is applied to a block X which is in contact with a separate block Y, as shown.



The blocks remain in contact as they accelerate along a horizontal frictionless surface. Air resistance is negligible. X has a greater mass than Y.

Which statement is correct?

- A The acceleration of X is equal to force F divided by the mass of X.
 - B The force that X exerts on Y is equal to F .
 - C The force that X exerts on Y is less than F .
 - D The force that X exerts on Y is less than the force that Y exerts on X.
- 8 A car of mass 750 kg has a horizontal driving force of 2.0 kN acting on it. It has a forward horizontal acceleration of 2.0 m s^{-2} .



What is the resistive force acting horizontally?

- A 0.50 kN B 1.5 kN C 2.0 kN D 3.5 kN