

Short Assessment 2 – Version 2

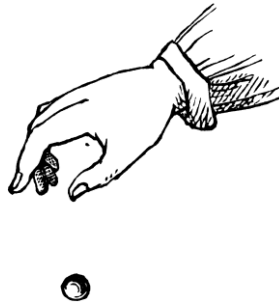
Time Allowed: 25 minutes

Total Marks: 26

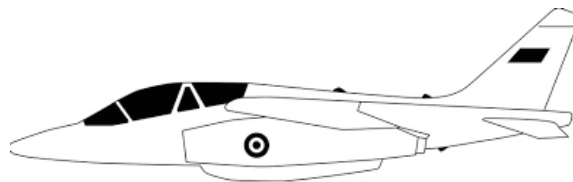
1. In this question you are asked to mark with arrows and label the forces acting on different objects.

If you are writing your answers on a different sheet of paper or on your notebook, you should make a rough sketch of the diagrams given below to answer the questions.

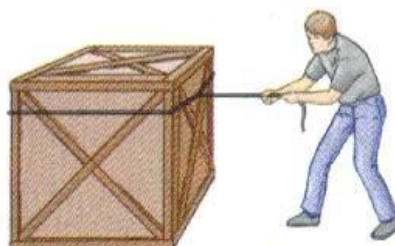
(a) A marble is dropped from a height. Mark and label the forces acting on the marble while it is falling through the air.



(b) An aeroplane accelerates to the left while flying horizontally. Mark and label the forces acting on the aeroplane.



(c) A person pulls a box along a horizontal floor to the right. Mark and label the forces acting on the box.



(d) A dog stands still on the ground. Mark and label the forces acting on the dog.



(12 marks)

2.



The figure given above shows a boy pushing a trolley along a floor.

The floor is horizontal.

The mass of the trolley and its contents is 8 kg.

(a) State the equation linking weight, mass and gravitational field strength.

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(1 mark)

(b) Calculate the weight of the trolley and its contents.

Weight = N
(1 mark)

The trolley moves horizontally with an acceleration of 4 m/s^2 .

(c) Work out the resultant force acting on the trolley.

Resultant Force =N
(2 marks)

(d) Given that the trolley and its contents experience a total resistive force of 40 N opposing the motion, work out the size of the forward pushing force on the trolley.

Forward pushing force = N
(2 marks)

3. For each of the following situations, explain whether there is a resultant force acting on the object mentioned.

If there is a resultant force, state the direction of the resultant force.

Explain clearly the reason(s) for your answers.

(a) An apple falling from a tree accelerating downwards.

(b) A football kicked along the ground moving along the ground and slowing down.

(c) An aeroplane flying horizontally along a straight line at a constant speed.

(8 marks)

- End of Test -