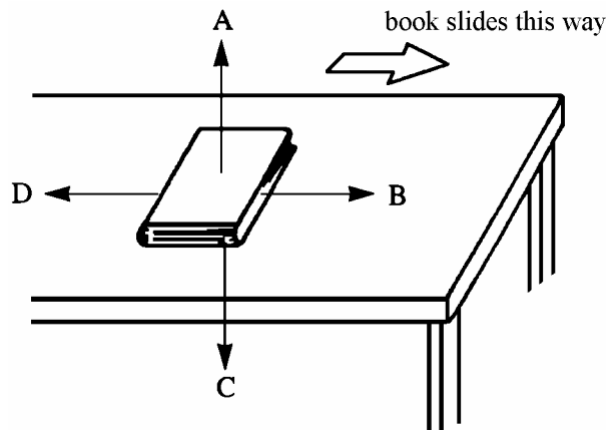# Topic 1.1 and 1.2 – Exam Style Questions   Name ………………

1.   When you slide a book across a table, there is a force of friction between the book and the table.

(a)   Which arrow shows the force of friction that acts on the book? ....
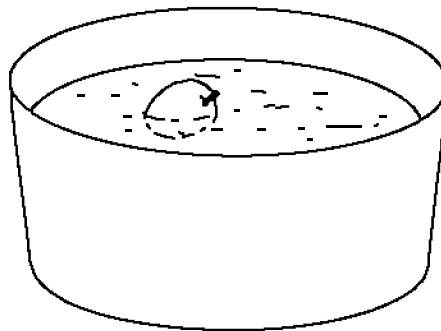
(1)

(b)   The force of friction will slow the book down.
Write down **one** other effect that the force of friction will have on the book.

....

(1)
(Total 2 marks)

2.

In a science lesson, some children float an apple on some water.

One of the children says:

"The apple is not moving. That means that there cannot be any forces acting on it."

Do you agree?
Explain your answer as fully as you can.

....

....

....

(Total 3 marks)

3. The graph shows the distance a person walked on a short journey.
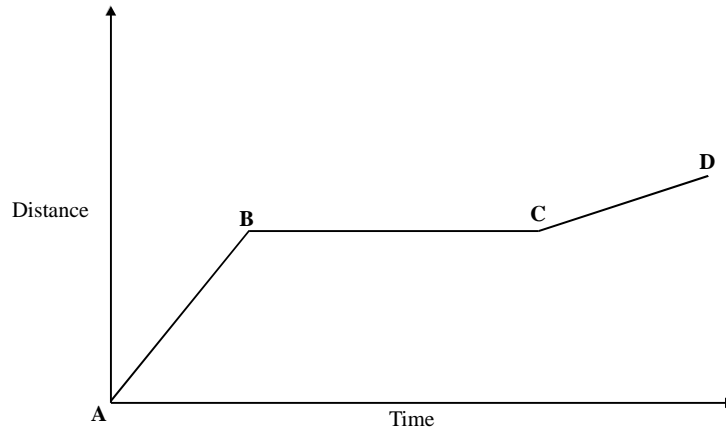
(a) Choose from the phrases listed to complete the statements which follow. You may use each statement once, more than once or not at all.

standing still

walking at constant speed

walking with an increasing speed

walking with a decreasing speed

   (i) Between points **A** and **B** the person is

     ....

(1)

   (ii) Between points **B** and **C** the person is

     ....

(1)

(b) Complete the sentence.

You can tell that the speed of the person between points **A** and **B** is ....

than the speed between points **C** and **D** because ....

....

(2)

(c) Write the equation which relates distance, speed and time.

....

(1)
(Total 5 marks)

4. The manufacturer of a family car gave the following information.

Mass of car   950 kg.

The car will accelerate from 0 to 33 m/s in 11 seconds.

(a) Calculate the acceleration of the car during the 11 seconds

....

....

Answer ....

(2)

(b) Calculate the force needed to produce this acceleration.

....

....

....

(3)

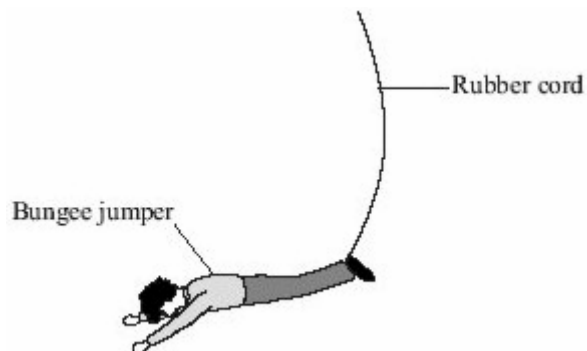(c) The manufacturer of the car claims a top speed of 110 miles per hour. Explain why there must be a top speed for any car.

....

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....
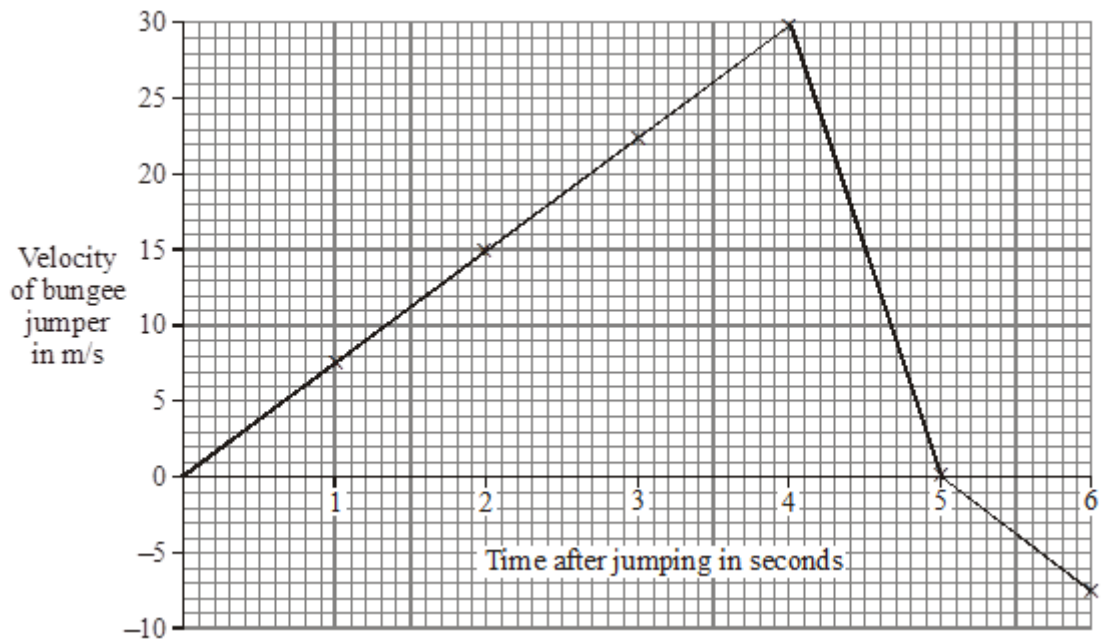
(3)
(Total 8 marks)

5. In bungee jumping, a fixed rubber cord is fastened to the jumper's ankles.

The graph shows how the bungee jumper's velocity changes during part of the jump.

(a) Calculate the acceleration of the bungee jumper between 2 and 4 seconds. Show your working.

....

....

....

....

Acceleration = ... m/s^2

(3)

(b) Describe, in as much detail as you can, what happens to the bungee jumper after 4 seconds.

....

....

....

....

....

....

(3)
(Total 6 marks)