Answer ALL questions.
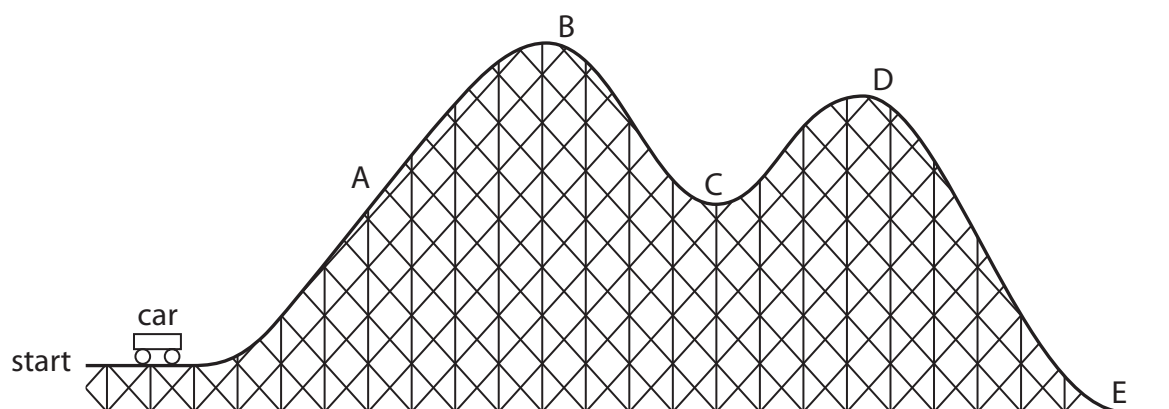
1 The diagram shows a roller-coaster ride.

   The car is pulled slowly from the start to point B and then released.

(a) Choose letters from the diagram to complete this sentence.

(2)

   The car has the most gravitational potential energy at point ....

   and it goes fastest at point ....

(b) The mass of the car is 900 kg.

   The maximum speed of the car is 15 m/s.

   (i) State the relationship between momentum, mass and velocity.

(1)

   (ii) Calculate the maximum momentum of the car.

   Give the unit.

(3)

                    maximum momentum = ... unit ....

(iii) State the equation linking kinetic energy (KE), mass and speed.

(1)

(iv) Calculate the maximum KE of the car.

(2)

maximum KE = ... J

(Total for Question 1 = 9 marks)