

Solutionbank M1

Heinemann Modular Maths for Edexcel AS and A-level

2 Kinematics in one dimension

Exercise A, Question 4

Question:

Sketch displacement-time and velocity-time graphs for the following.

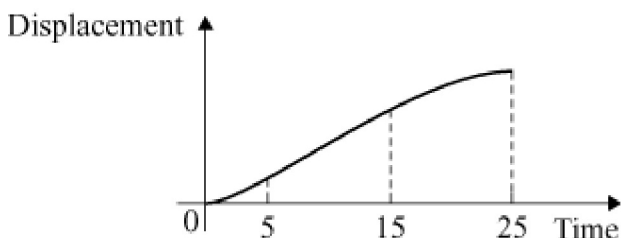
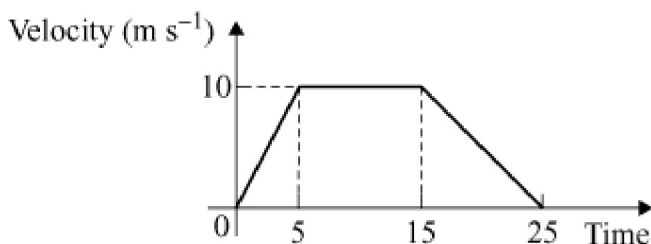
(a) A car that starts from rest and increases its velocity steadily to 10 m s^{-1} in 5 seconds. The car holds this velocity for another 10 seconds and then slows steadily to rest in a further 10 seconds. Assume that the car travels along a straight line.

(b) A ball that is dropped on to a horizontal floor from a height of 3 m. The ball bounces several times before coming to rest.

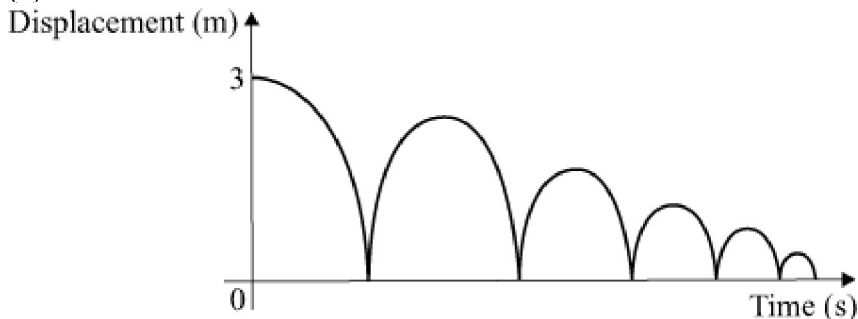
(c) A person who jumps out of a balloon and falls until the parachute opens. The person then glides steadily to the ground. All the motion takes place along a vertical line.

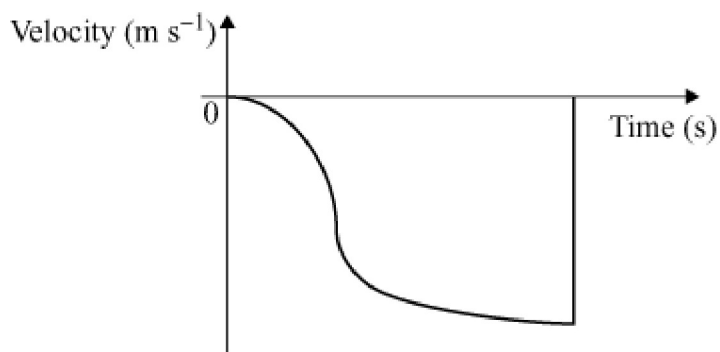
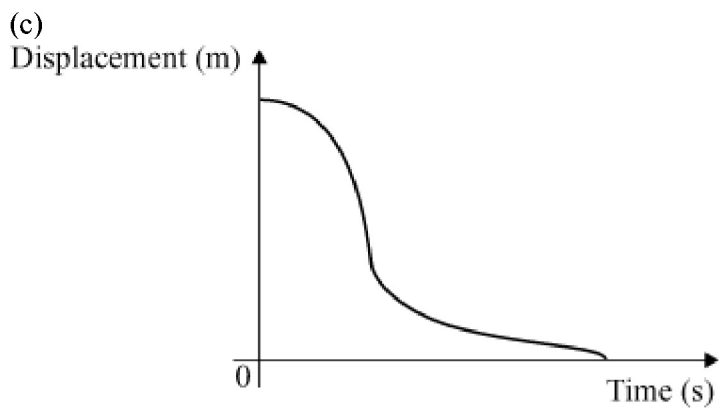
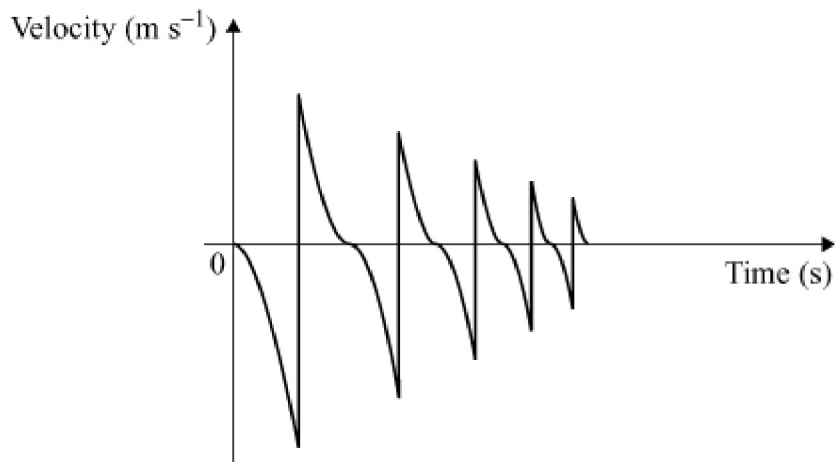
Solution:

(a)



(b)





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