

- 2 An object of constant mass moves in a straight line. The variation with time t of the momentum p of the object is shown in Fig. 2.1.

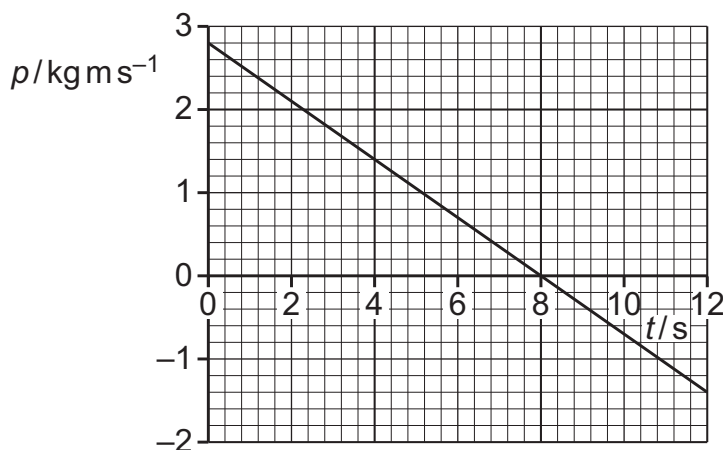


Fig. 2.1

- (a) Define momentum.

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 [1]

- (b) Calculate the change in momentum of the object from time $t = 0$ to $t = 12$ s.

change in momentum = kg m s^{-1} [1]

- (c) Calculate the magnitude of the resultant force acting on the object.

force = N [2]

- (d) Describe the variation of the speed of the object from time $t = 0$ to $t = 8.0$ s.

.....
 [1]

- (e) By reference to Fig. 2.1, explain why the resultant force acting on the object during the first 8.0 s of its motion cannot be due to air resistance.

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 [2]