3 A ball falls from rest onto a flat horizontal surface. Fig. 3.1 shows the variation with time t of the velocity v of the ball as it approaches and rebounds from the surface.

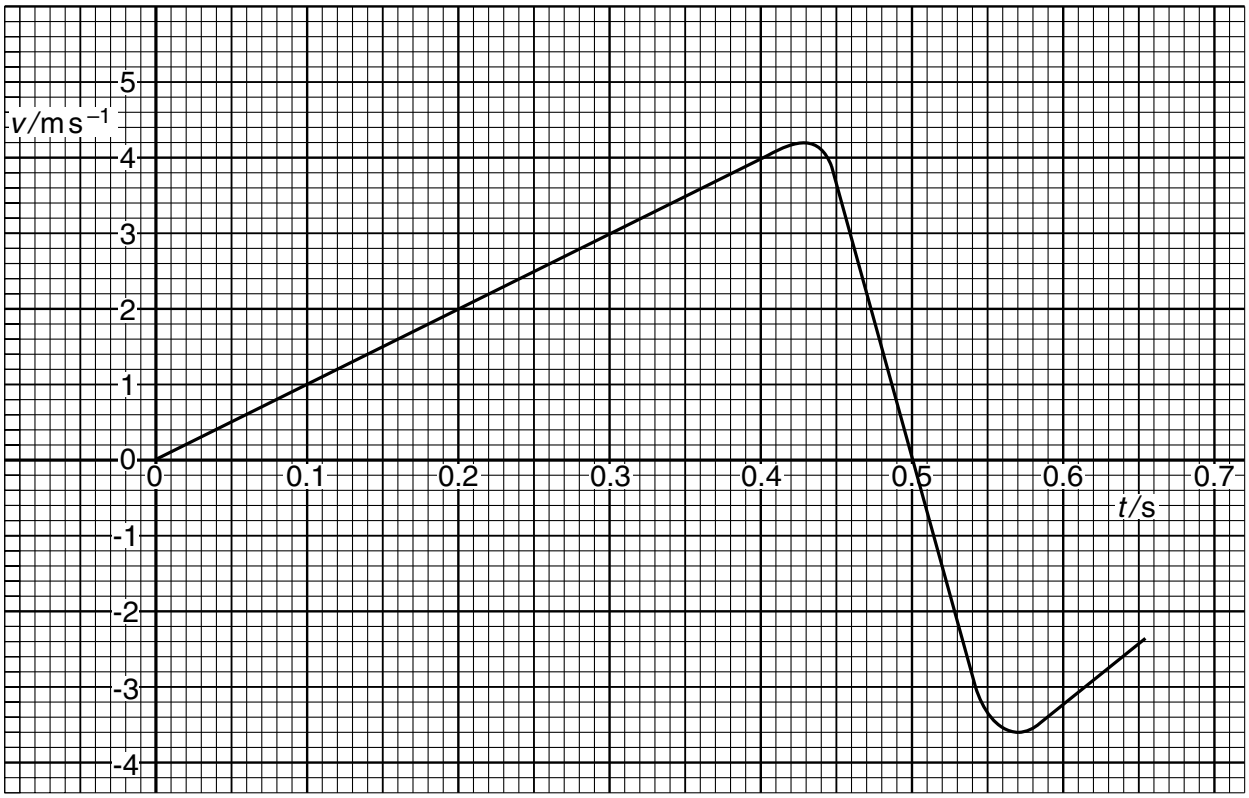

Fig. 3.1

Use data from Fig. 3.1 to determine

(a) the distance travelled by the ball during the first 0.40 s,

distance = ... m [2]

(b) the change in momentum of the ball, of mass 45 g, during contact of the ball with the surface,

change = …….. N s [4]

(c) the average force acting on the ball during contact with the surface.

force = …….. N [2]