4 A trolley of mass 930 g is held on a horizontal surface by means of two springs, as shown in Fig. 4.1.
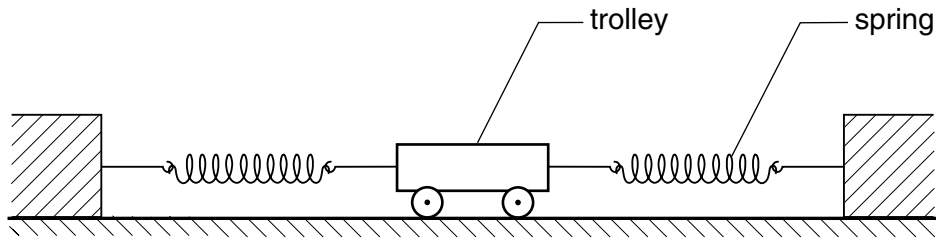

Fig. 4.1

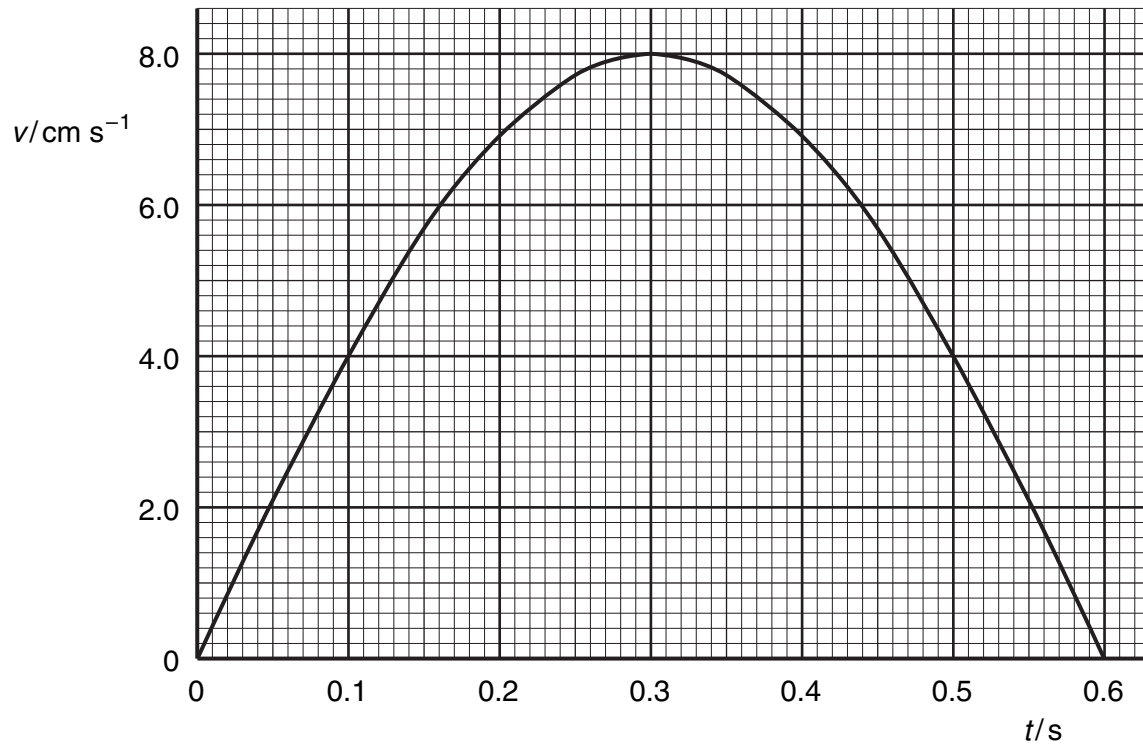The variation with time t of the speed v of the trolley for the first 0.60 s of its motion is shown in Fig. 4.2.

Fig. 4.2

(a) Use Fig. 4.2 to determine

  (i) the initial acceleration of the trolley,

acceleration = ……………………… m s^{-2} [2]

(ii) the distance moved during the first 0.60 s of its motion.

distance = …………………………… m [3]

(b) (i) Use your answer to **(a)(i)** to determine the resultant force acting on the trolley at time $t = 0$.

force = …………………………….. N [2]

(ii) Describe qualitatively the variation with time of the resultant force acting on the trolley during the first 0.60 s of its motion.

....

....

....

.... [3]

 [Turn over