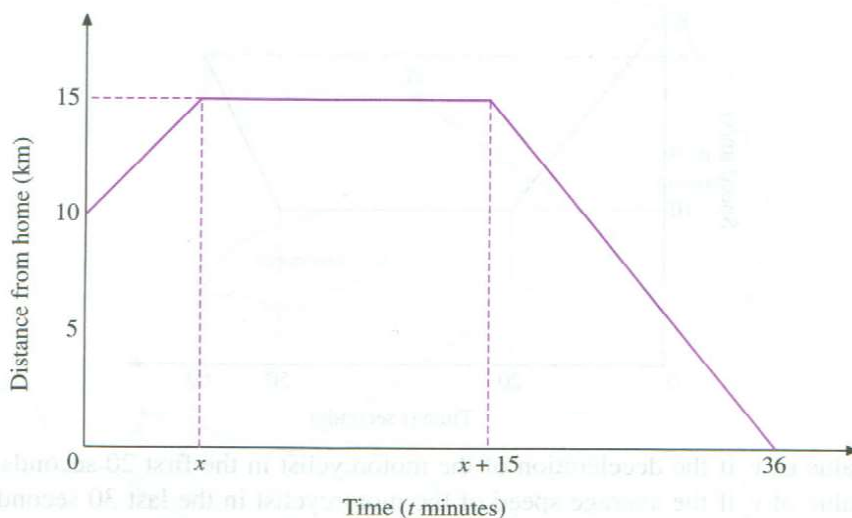
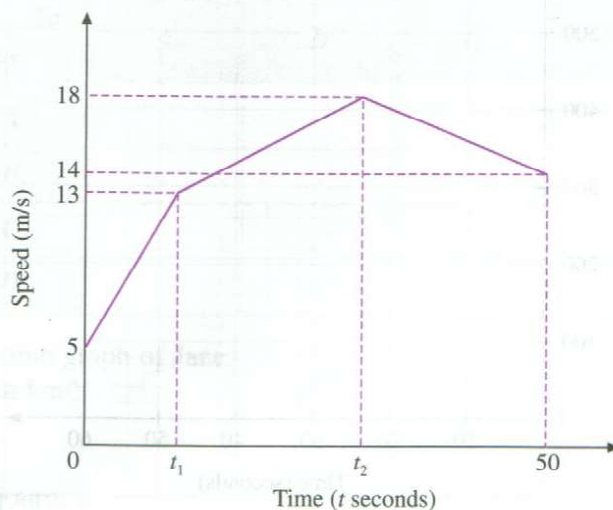


23. Mrs Tan drove to a supermarket after work to buy some groceries. After her purchase at the supermarket, she drove home to prepare dinner. The diagram shows a simplified distance-time graph of Mrs Tan's journey.



- How far is
    - the supermarket from Mrs Tan's place of work?
    - Mrs Tan's place of work from her home?
  - Mrs Tan's driving speed from her place of work to the supermarket was 10 km/h slower than her driving speed from the supermarket to her home. Form an equation in  $x$  and solve it.
  - Hence, express the time that Mrs Tan spent in the supermarket as a percentage of the time when she was driving.
24. The diagram shows the speed-time graph of a van during a 50-second interval of a journey.



- The distance travelled from  $t = t_1$  to  $t = t_2$  is 10 m less than the distance travelled from  $t = t_2$  to  $t = 50$ . Show that an equation in  $t_1$  and  $t_2$  is  $63t_2 - 31t_1 = 1580$ .
- The acceleration of the van from  $t = t_1$  to  $t = t_2$  is 1.25 times the deceleration of the van from  $t = t_2$  to  $t = 50$ . Show that an equation in  $t_1$  and  $t_2$  is  $2t_2 - t_1 = 50$ .
- Solve the simultaneous equations in (a) and (b).
- Hence, find
  - the acceleration of the van from  $t = t_1$  to  $t = t_2$ ,
  - the average speed of the van from  $t = 0$  to  $t = 50$ .