1. A car is moving along a straight road.

- At time $t = 0$, the speed of the car is $18\,\text{m s}^{-1}$
- The car decelerates at a constant rate for 5 seconds from time $t = 0$, reducing its speed from $18\,\text{m s}^{-1}$ to $V\,\text{m s}^{-1}$
- The car then continues at a constant speed of $V\,\text{m s}^{-1}$ for 15 seconds
- The car then accelerates at a constant rate for 5 seconds, increasing its speed from $V\,\text{m s}^{-1}$ to $16\,\text{m s}^{-1}$

(a) Sketch a speed-time graph for the motion of the car from $t = 0$ to $t = 25$ seconds.

(2)

Between $t = 0$ to $t = 25$ seconds, the car travels a total distance of 325 m.

(b) Find the value of V.

(4)

(c) Find the deceleration of the car.

(2)