

4. A car is moving on a straight horizontal road. At time $t = 0$, the car is moving with speed 20 m s^{-1} and is at the point A . The car maintains the speed of 20 m s^{-1} for 25 s. The car then moves with constant deceleration 0.4 m s^{-2} , reducing its speed from 20 m s^{-1} to 8 m s^{-1} . The car then moves with constant speed 8 m s^{-1} for 60 s. The car then moves with constant acceleration until it is moving with speed 20 m s^{-1} at the point B .

(a) Sketch a speed-time graph to represent the motion of the car from A to B . (3)

(b) Find the time for which the car is decelerating. (2)

Given that the distance from A to B is 1960 m,

(c) find the time taken for the car to move from A to B . (8)



