

**10** A particle  $P$  is moving in a straight line. At time  $t$  seconds  $P$  has velocity  $v \text{ m s}^{-1}$  where  $v = (2t + 1)(3 - t)$ .

**(a)** Find the deceleration of  $P$  when  $t = 4$ . **[2]**

**(b)** State the positive value of  $t$  for which  $P$  is instantaneously at rest. **[1]**

**(c)** Find the total distance that  $P$  travels between times  $t = 0$  and  $t = 4$ . **[3]**