5 A particle P moves along the x-axis. At time t seconds ($t \geqslant 0$) the velocity, v m/s, of P is given by $v = 5\cos 2t$. Find

(a) the least value of t for which P is instantaneously at rest,

(2)

(b) the magnitude of the maximum acceleration of P.

(3)

When $t = 0$, P is at the point (2, 0).

(c) Find the distance of P from the origin when P first comes to instantaneous rest.

(4)

Question 5 continued

(Total for Question 5 is 9 marks)