5.7 A body of mass 2kg travels according to the law $x(t) = pt + qt^2 + rt^3$ where $p = 3\,\text{ms}^{-1}$, $q = 4\,\text{ms}^{-2}$ and $r = 5\,\text{ms}^{-3}$.

The force acting on the body at $t = 2$ seconds is

(a) 136 N
(b) 134 N
(c) 158 N
(d) 68 N

(7) $x(t) = pt + qt^2 + rt^3$

$v = \dfrac{dx}{dt} = p + 2qt + 3rt^2$

$a = \dfrac{d^2x}{dt^2} = 2q + 6rt$

$F = ma = 2(2(4) + 6(5) \cdot (2))$

$= 136\, N$