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$$a(t) = (3t^2 + 2) \frac{m}{s^2} \rightarrow \text{acceleration function}$$

$$v(t) = \int a(t) dt.$$

$$v(t) = \frac{3t^3}{3} + 2t = (t^3 + 2t) m/s$$

$$(a) \quad v(2 \text{ sec}) = (2)^3 + 2(2) = 12 \frac{m}{s}$$

$$s(t) = \int v(t) dt$$

$$s(t) = \frac{t^4}{4} + \frac{2t^2}{2} = \frac{1}{4}t^4 + t^2$$

$$(b) \quad s(2 \text{ sec}) = \frac{1}{4}(2 \text{ sec})^4 + (2 \text{ sec})^2 = 8 \text{ m}$$