

2/3

$$v = 2 - 4t + 5t^{3/2}$$

$$a = \frac{dv}{dt} = -4 + \frac{15}{2}t^{1/2}$$

$$\frac{ds}{dt} = 2 - 4t + 5t^{3/2}$$

$$\int_{s_0=3}^s ds = \int_0^t (2 - 4t + 5t^{3/2}) dt$$

$$s = 3 + 2t - 2t^2 + 2t^{5/2}$$

$$\text{At } t = 3s : \begin{cases} s = 22.2 \text{ m} \\ v = 15.98 \text{ m/s} \\ a = 8.99 \text{ m/s}^2 \end{cases}$$