

2/28 The area under the a-s curve is

$$\int_0^v u \, du = \frac{1}{2} v^2$$

$$\text{Area} \Big|_0^{200 \text{ m}} = \frac{3+6}{2} (100) + \frac{6+4}{2} (100) = 950 \text{ m}^2/\text{s}^2$$

$$\text{So } \frac{1}{2} v^2 = 950, \quad \underline{v = 43.6 \text{ m/s}}$$

$$\frac{dv}{ds} = \frac{a}{v} = \frac{4}{43.6} = \underline{0.0918 \text{ s}^{-1}}$$