

2/37 $a = P/(mv)$, P & m are constant

$$v dv = a ds; \quad v dv = \frac{P}{mv} ds$$

$$\int_{v_1}^{v_2} m v^2 dv = P \int_0^s ds, \quad s = \frac{m}{3P} (v_2^3 - v_1^3)$$

$$dv = a dt; \quad dv = \frac{P}{mv} dt$$

$$m \int_{v_1}^{v_2} v dv = \int_0^t P dt, \quad t = \frac{m}{2P} (v_2^2 - v_1^2)$$