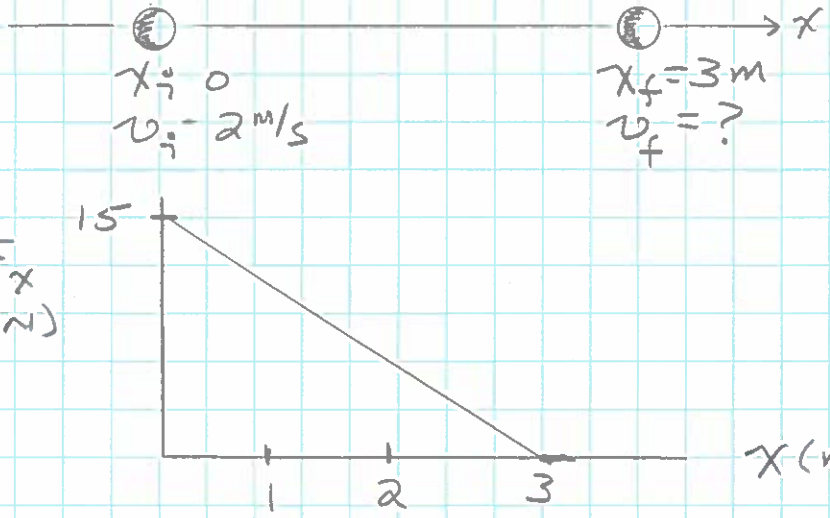
$m = 500\,g$



$\Delta K = W_{net}$

$\Delta K = K_f - K_i = \frac{1}{2} m v_f^2 - \frac{1}{2} m v_i^2$

$W_{net} = \int_{x_i}^{x_f} F_x dx$ = area under F_x vs x curve $x_i \to x_f$

$= \frac{1}{2}(3)(15)$

$= 22.5\,J.$

So:

$$\frac{1}{2} m v_f^2 - \frac{1}{2} m v_i^2 = W_{net}$$

$$v_f = \sqrt{\frac{2}{m}(W_{net}) + v_i^2}$$

$$= \underline{9.695\ m/s}$$