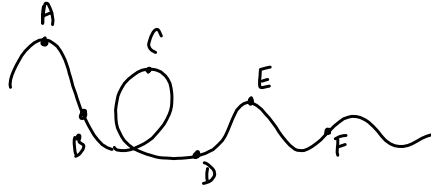


Conservation of Mechanical Energy

$$E_{\text{total}} = E'_{\text{total}}$$

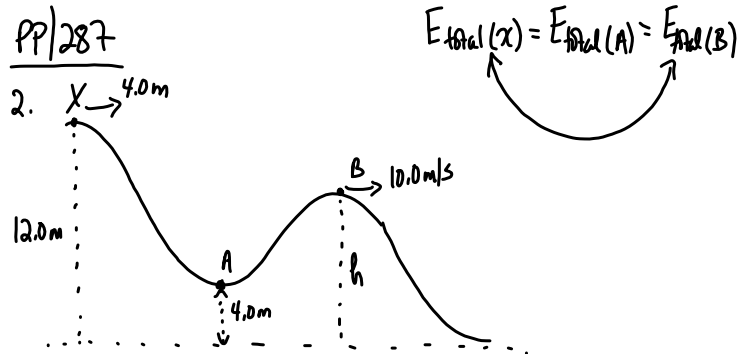
(before) (after)

$$E_k + E_g + E_e = E_k + E_g + E_e$$



$$E_{\text{total}} = E'_{\text{total}}$$

(A) (F)



$$E_{\text{total}} = E'_{\text{total}}$$

X B

$$E_k + E_g = E'_k + E'_g$$

$$\frac{1}{2}mv_x^2 + mgh_x = \frac{1}{2}mv_B^2 + mgh_B$$

$$\frac{1}{2}(4.0\text{m/s})^2 + (9.81\text{m/s}^2)(12.0\text{m}) = \frac{1}{2}(10.0\text{m/s})^2 + (9.81\text{m/s}^2)h_B$$

$$8.0 \frac{\text{m}^2}{\text{s}^2} + 117.72 \frac{\text{m}^2}{\text{s}^2} = 50.0 \frac{\text{m}^2}{\text{s}^2} + (9.81\text{m/s}^2)h_B$$

$$125.72 \frac{\text{m}^2}{\text{s}^2} = 50.0 \frac{\text{m}^2}{\text{s}^2} + (9.81\text{m/s}^2)h_B$$

TO DO

- ① Finish PP/287
- ② Video analysis
- ③ Calculator pad.

$$75.72 \frac{\text{m}^2}{\text{s}^2} = (9.81\text{m/s}^2)h_B$$

$$h_B = 7.72\text{m}$$