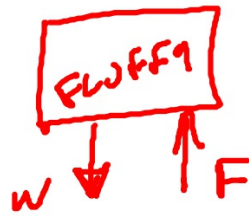


$$\textcircled{1} W = mg$$

$$m = 1.5 \text{ kg}$$

$$g = 9.8 \text{ m/s}^2$$



$$d_v = 5 \text{ m} \textcircled{\uparrow}$$

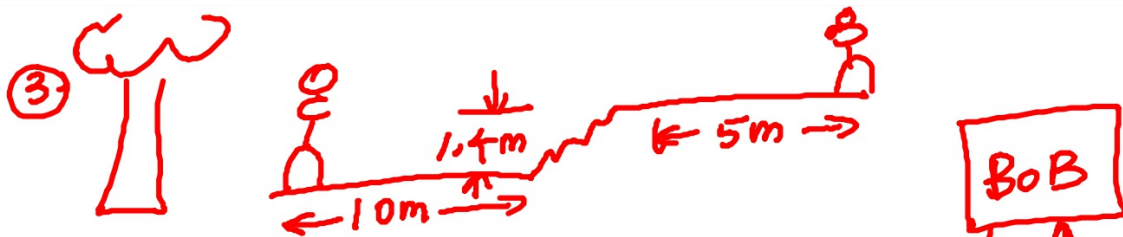
PARALLEL

$$W = mg = (1.5 \text{ kg})(9.8 \text{ m/s}^2) = 14.7 \text{ N} \downarrow$$

$$F = W = 14.7 \text{ N} \textcircled{\uparrow}$$

$$\text{WORK} = F_{\parallel} d = (14.7 \text{ N})(5 \text{ m})$$

$$\text{WORK} = 73.5 \text{ J}$$



$$m = 85 \text{ kg}$$

$$g = 9.8 \text{ m/s}^2$$

$$W = (mg) = (85 \text{ kg})(9.8 \text{ m/s}^2) = 833 \text{ N} \downarrow$$

$$d_v = 1.4 \text{ m} \uparrow$$

$$d_H = 10 \text{ m} + 5 \text{ m} = 15 \text{ m} \rightarrow$$

NOT PARALLEL  
Therefore  
This DOES NOT COUNT

$$F = 833 \text{ N} \uparrow$$

$$\text{WORK} = F_{\parallel} d = (833 \text{ N})(1.4 \text{ m})$$

$$\text{WORK} = 1166.2 \text{ J}$$

⑦

$$m = 9000 \text{ kg}$$



$$\text{Drag } F = 200 \text{ N} \leftarrow$$

HORIZONTAL

$$F_H = \text{DRAG} = 200 \text{ N} \rightarrow$$

$$d_H = 5000 \text{ m} \rightarrow$$

$$\text{WORK}_H = F_H d = (200 \text{ N})(5000 \text{ m})$$

$$\text{WORK}_H = 1,000,000 \text{ J}$$

VERTICAL

$$W = mg = (9000 \text{ kg})(9.8 \text{ m/s}^2)$$

$$F = 88200 \text{ N} \downarrow$$

$$F = 88200 \text{ N} \uparrow$$

$$d_V = 20 \text{ m} \uparrow$$

$$\text{WORK}_V = F_H d = -(88200 \text{ N})(20 \text{ m})$$

$$= -1,764,000 \text{ J}$$

⑦

$$WORK_H = 1,000,000 \text{ J}$$

$$WORK_V = 1,764,000 \text{ J}$$

Total WORK	2,764,000 J
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⑧ POWER takes 6 minutes

$$\Delta t = 6 \text{ min} \times \frac{60 \text{ sec}}{1 \text{ min}} = 360 \text{ sec}$$

$$Power = \frac{WORK}{\Delta t} = \frac{2,764,000 \text{ J}}{360 \text{ s}}$$

$P = 7,677.78 \text{ W}$
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