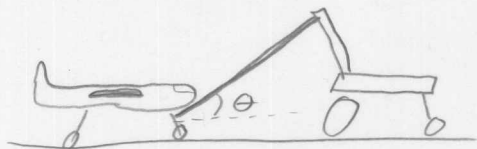


Physics 11
Homework

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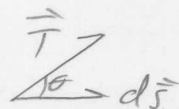


Given

$$W_T = 8.7 \times 10^6 \text{ J}$$

$$\theta = 22^\circ$$

$$T = 4.1 \times 10^5 \text{ N}$$



$$W = \int \vec{F} \cdot d\vec{s}$$

$$= \int_0^d T \cos \theta dx = dT \cos \theta$$

$$d = \frac{W}{T \cos \theta} = \frac{8.7 \times 10^6 \text{ J}}{(4.1 \times 10^5) \cos(22^\circ)} = 23 \text{ meters}$$