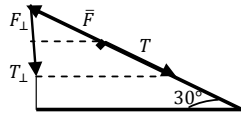


Condition:

A boy is pulling a load of 150N with a sling inclined at an angle of 30 to the horizontal. If the tension in the sling is 105N, the force tending to lift the load off the ground is

Solution:

$$F_{lift} = F_{\perp} - T_{\perp} = F \cdot \sin 30^\circ = (F - T) \sin 30^\circ$$

Where F_{lift} is force tending to lift the load off the ground, F_{\perp} is boy's force, T_{\perp} is tension in the sling.

$$F_{lift} = (150 - 105) \cdot \frac{1}{2} = 22.5N$$

Answer: $F_{lift} = 22.5N$.