

NORMAL FORCE → A FORCE THAT'S PERPENDICULAR TO THE SURFACE THAT SEPARATES TWO OBJECTS - USUALLY IT'S REACTING TO THE WEIGHT OF AN OBJECT.



$W = \text{WEIGHT} = mg = (100 \text{ kg})(9.81 \text{ m/s}^2) = 981 \text{ N}$

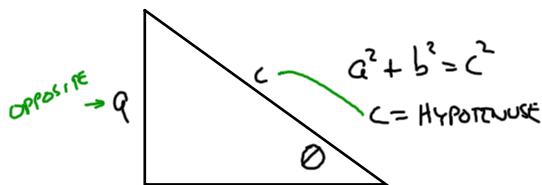
$F_N = \text{NORMAL FORCE}$

$\sum F'_{sy} = ma_y$

$\sum F'_{sy} = 0$

$-W + F_N = 0$

$F_N = W =$



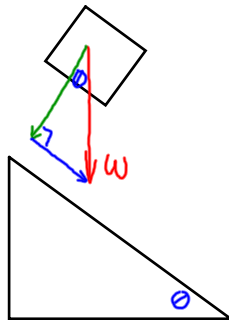
θ = GREEK LETTER THETA

b ↑ ADJACENT

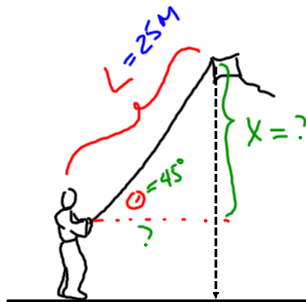
$\sin \theta = \frac{\text{OPP}}{\text{HYP}} \rightarrow \text{SOH}$

$\cos \theta = \frac{\text{ADJACENT}}{\text{HYP}} \rightarrow \text{CAH}$

$\tan \theta = \frac{\text{OPP}}{\text{ADJ}} \rightarrow \text{TOA}$



$W \cos \theta = W_{\perp}$
 (WEIGHT PART THAT'S PERPENDICULAR)



$\sin \theta = \frac{X}{L}$

$\sin 45^\circ = \frac{X}{25}$

$.707 = \frac{X}{25}$

$X = 17.68 \text{ M}$