

Physics 112 Inclined Planes

The weight of the object, F_g , needs to be broken into x and y components.

$\sin \theta = \frac{F_{gx}}{F_g}$
 $F_{gx} = F_g \sin \theta$
 $\cos \theta = \frac{F_{gy}}{F_g}$
 $F_{gy} = F_g \cos \theta$

3 cases on a hill

- ① Sliding on its own

$N = F_{gy}$

$F_n = F_{gx} - f$
- ② Pushing it up the hill

$N = F_{gy}$

$F_n = F - F_{gx} - f$
- ③ Pushing it down the hill

$N = F_{gy}$

$F_n = F_{gx} + F - f$

Oct 25-8:50 AM