

Friction is caused by imperfections in the surface.
 Highly polished objects still have a roughness when magnified.

dimensionless (no units) Coefficient of friction: $\mu = \frac{f}{N} = \frac{\text{friction (N)}}{\text{Normal force (N)}}$ *units (N)*

$f = \mu N$

Normal force: A force that is perpendicular \perp to the surface of contact.

Ex 1.

$m = 52.0 \text{ kg}$
 $\mu_k = ?$
 $F = 85.0 \text{ N}$
 con. sp (acc=0)
 $f = 85.0 \text{ N}$
 $F_n = Ma$

free body diagram

$F_n = F - f$
 $0 = F - f$
 $f = F$

$\mu = \frac{f}{N} = \frac{85.0 \text{ N}}{510.12 \text{ N}} = 0.17$

up = down
 $N = F_g$

Oct 16-9:21 AM