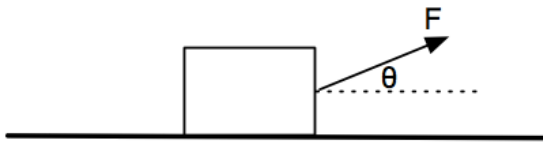


HW: FORCES - ACCELERATED MOTION (one body)



1. For the pict solve for acceleration if the block is moving without friction,  $M = 5 \text{ kg}$ , and  $\theta = 30^\circ$ , &  $F = 20\text{N}$ .

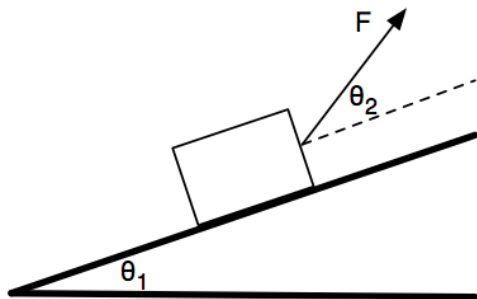
$[a=3.46\text{m/s}^2]$

2. For the pict solve for  $\mu$  if the block is accelerating at  $1.12 \text{ m/s}^2$ ,  $M = 10 \text{ kg}$ , and  $\theta = 37^\circ$ , &  $F = 60\text{N}$ .

$[\mu=0.595]$

3. For the pict solve for  $F$  if the block is accelerating at  $2.1 \text{ m/s}^2$ ,  $M = 8.0 \text{ kg}$ ,  $\theta = 45^\circ$ , &  $\mu = 0.25$

$[F=42.1\text{N}]$



4. For the second pict solve for the mass of the block if :  $\mu = .25$  kg,  $\theta_1 = 25^\circ$ ,  $\theta_2 = 22^\circ$ , &  $F = 35\text{N}$ ,  $a=2.0 \text{ m/s}^2$   $[M = 4.27 \text{ kg}]$

5. For the second pict solve for  $\mu$  if :

$M = 10 \text{ kg}$ ,  $\theta_1 = 37^\circ$ ,  $\theta_2 = 30^\circ$ , &  $F = 100\text{N}$ ,  $a=2.0 \text{ m/s}^2$

$[\mu=0.275]$

6. For the second pict solve for acceleration if :  $M = 5 \text{ kg}$ ,

$\theta_1 = 30^\circ$ ,  $\theta_2 = 15^\circ$ ,  $\mu = .2$ , &  $F = 10\text{N}$ . **[Note: the force is NOT large enough to accelerate the block UP the incline]**