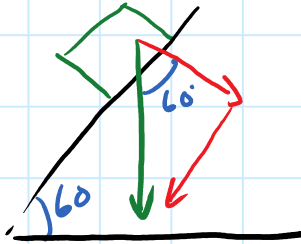
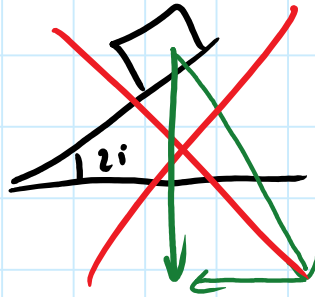
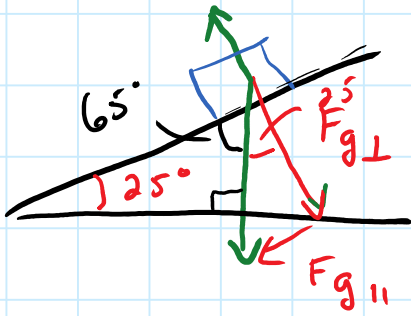
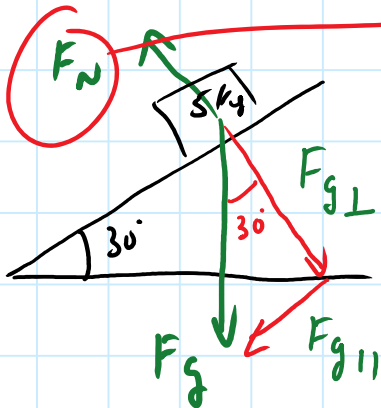


Inclines

Monday, February 20, 2017 1:52 PM



a)

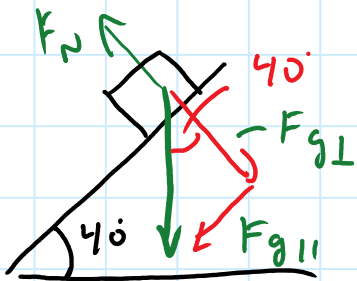


$$F_g = mg = 5(9.8) = 49 \text{ N}$$

$$F_{g\perp} = 49 \text{ N} \cos 30^\circ = 42.4 \text{ N}$$

$$F_{g\parallel} = 49 \text{ N} \sin 30^\circ = 24.5 \text{ N}$$

d)

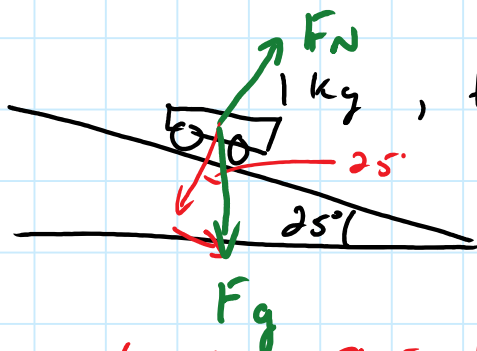


$$F_g = 196 \text{ N}$$

$$F_{g\perp} = 196 \cos 40^\circ = \underline{150 \text{ N}}$$

$$F_{g\parallel} = 196 \sin 40^\circ = \underline{126 \text{ N}}$$

Ex



$$F_a = 1(9.8) = 9.8 \text{ N}$$

1 kg, frictionless, a = ?

$$F_{net} = F_{g\parallel}$$

$$ma$$

$$(1 \text{ kg})a = 9.8 \text{ N}$$

$$F_g = 1(9.8) = 9.8 \text{ N}$$

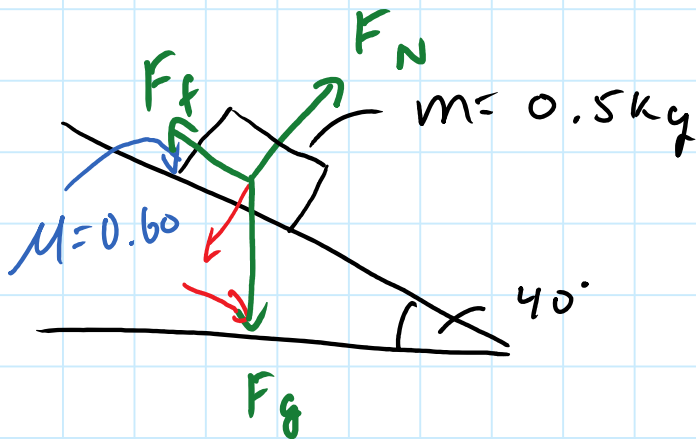
$$F_{g\perp} = 9.8 \cos 25 = 8.88 \text{ N}$$

$$F_{g\parallel} = 9.8 \sin 25 = 4.14 \text{ N}$$

$$ma$$

$$(1 \text{ kg})a = 4.14 \text{ N}$$

$$a = 4.14 \text{ m/s}^2$$



Find acc. (will it move?)

$$F_{\text{net}} = F_{g\parallel} - F_f$$

$$ma = 3.15 \text{ N} - 2.25 \text{ N}$$

$$(0.5)a = 0.9 \text{ N}$$

$$a = 1.8 \text{ m/s}^2$$

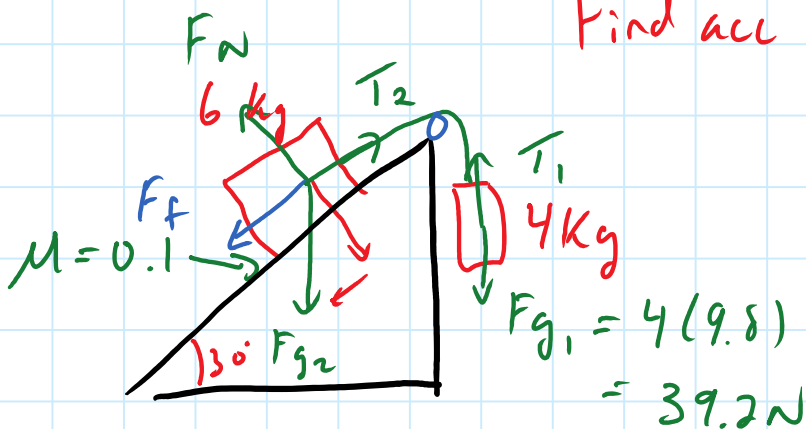
$$F_g = (0.5)(9.8) = 4.9 \text{ N}$$

$$F_{g\perp} = 4.9 \text{ N} \cos 40 = 3.75 \text{ N}$$

$$F_{g\parallel} = 4.9 \sin 40 = 3.15 \text{ N}$$

$$F_f = \mu F_N = (0.6)(3.75 \text{ N}) = 2.25$$

Find acc of the system



$$F_{\text{net}} = F_{g_1} - T_1 + T_2 - F_{g\parallel} - F_f$$

$$ma = 39.2 \text{ N} - 29.4 \text{ N} - 5.1 \text{ N}$$

$$10(a) = 4.7 \text{ N}$$

$$a = 0.47 \text{ m/s}^2$$

$$F_{g2} = 6(9.8) = 58.8 \text{ N}$$

$$F_{g\perp} = 58.8 \cos 30^\circ = 50.9 \text{ N}$$

$$F_{g\parallel} = 58.8 \sin 30^\circ = 29.4 \text{ N}$$

$$F_f = \mu F_N = .1(50.9 \text{ N}) = 5.1 \text{ N}$$