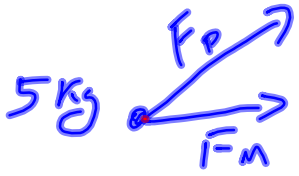
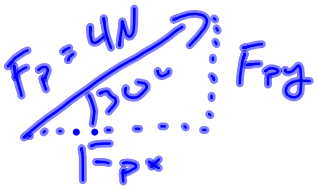




$\overrightarrow{F_m = 3N} = F_{mx}$

b/c $\Sigma F_x = F_m + F_{px}$

$= 3N + 4N \cos 30$

$=$

$\Sigma F_y = F_{py}$

$= 4N \sin(30^\circ)$

$=$

d/e $a_x = \frac{\Sigma F_x}{m}$

$a_y = \frac{\Sigma F_y}{m}$

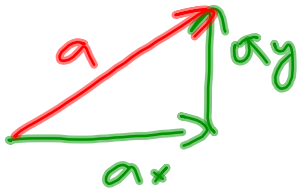
f/g ΣF

$c^2 = a^2 + b^2$

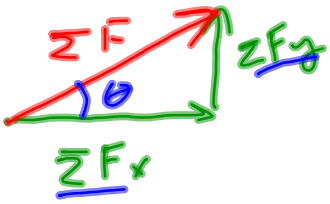
$\Sigma F^2 = \Sigma F_x^2 + \Sigma F_y^2$

$\Sigma F = \sqrt{\Sigma F_x^2 + \Sigma F_y^2}$

a

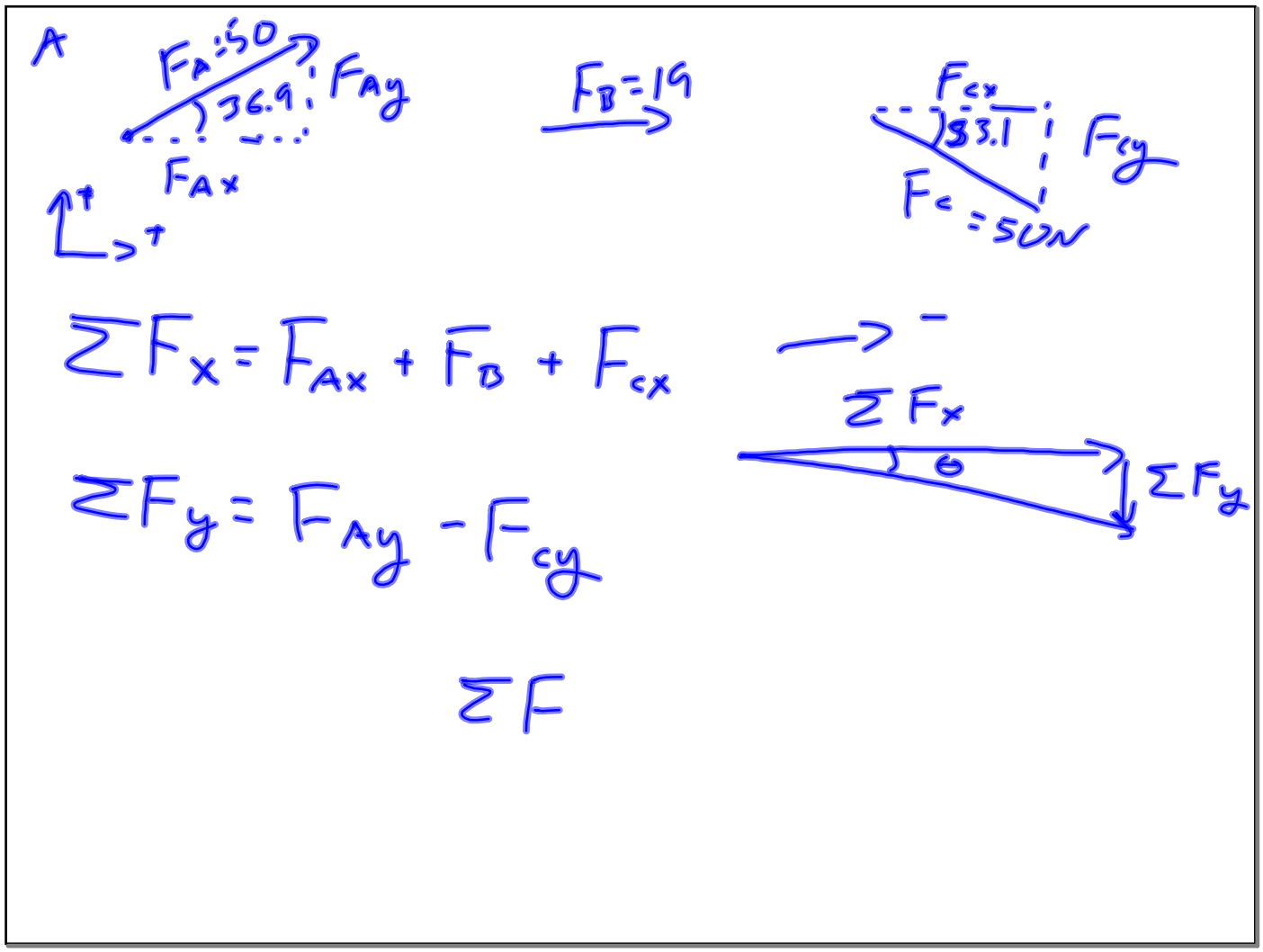


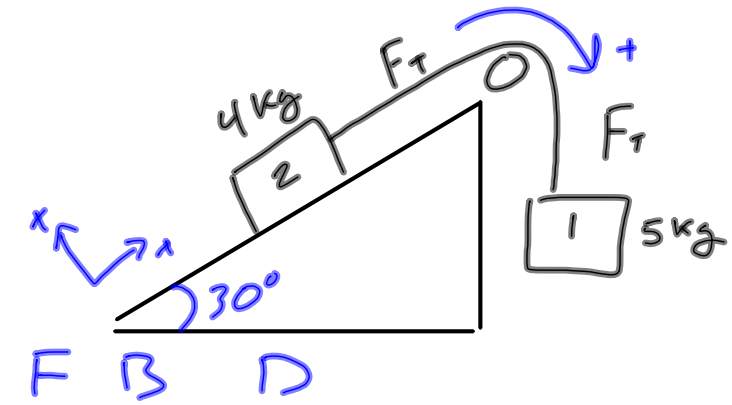
$a = \frac{\Sigma F}{m}$



$\tan\theta = \frac{\Sigma F_y}{\Sigma F_x}$

$\theta = \tan^{-1}\left(\frac{\Sigma F_y}{\Sigma F_x}\right)$


A
$F_A = 50$
36.9
F_{Ay}
F_{Ax}
$F_B = 19$
F_{cx}
33.1
F_{cy}
$F_c = 50N$
$\Sigma F_x = F_{Ax} + F_B + F_{cx}$
$\Sigma F_y = F_{Ay} - F_{cy}$
ΣF_x
θ
ΣF_y
ΣF



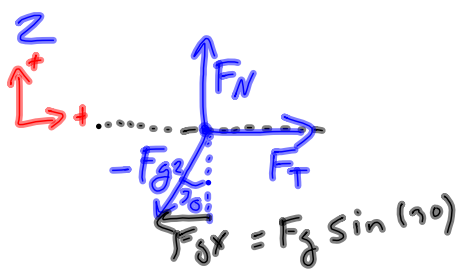
F B D

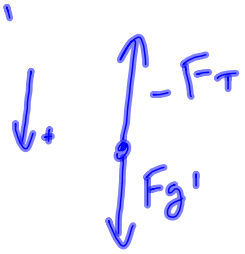
Find F_T, a

accelerations are the same

Tilt the FBD

F_T's are the same





$$a_x = a = \frac{\Sigma F_x}{m_2}$$

$$a = \frac{\Sigma F_1}{m_1}$$

$$a = \frac{F_{g1} + (-F_T)}{m_1}$$

$$a = \frac{-F_{gx} + F_T}{m_2}$$

$$a = \frac{-(4)(10)\sin(30) + F_T}{4}$$

$$a = \frac{5kg(10) - F_T}{5}$$

Set equal to each other

$$4 \cdot 5\left(\frac{-20 + F_T}{4}\right) = \left(\frac{50 - F_T}{5}\right)5 \cdot 4$$

$$-100 + 5F_T = 200 - 4F_T$$

(+100 to both sides; $\times 4F_T$)

$$9F_T = 300$$

$$F_T = \frac{300}{9}$$

plug in to get a

November 06, 2015