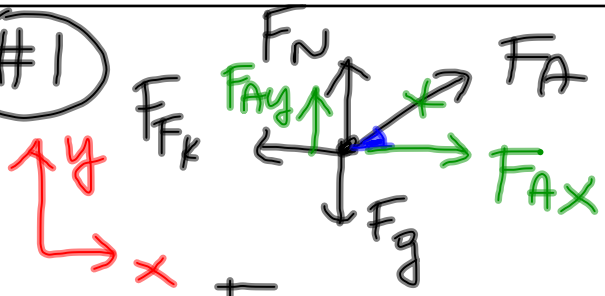
HW #1

a-e



$g = 10 \frac{m}{s^2}$

$F_{Ax} = F_A \cdot \cos\theta$

$F_{Ay} = F_A \cdot \sin\theta$

$F_g = m \cdot g$

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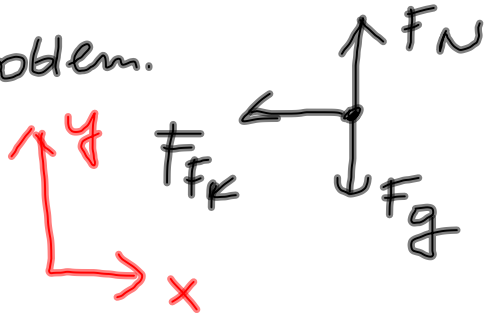
f) New problem.



μ_K STAYS THE SAME

$F_N =$ ____

$F_{F_K} = \mu_K \cdot F_N$

N2L (x): $\Sigma F_x = m \cdot a_x$

$-F_{F_K} = m a_x$

CORRECT ANS.

$a_x = -\frac{F_{F_K}}{m}$

$a_x = -5.8 \frac{m}{s^2}$

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Def. $\mu_k = \frac{F_{fk}}{F_N}$ $F_{fk} = \mu_k \cdot F_N$.

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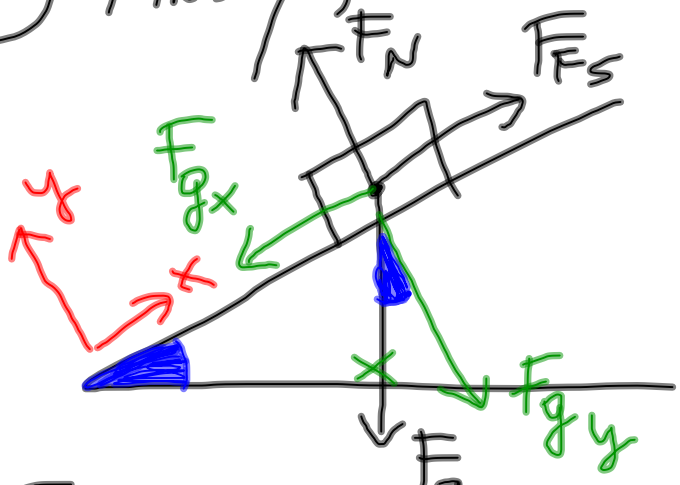
LAB.) FIND μ_s OF YOUR SHOE.



$F_{gx} = F_g \cdot \sin\theta$

$F_{gy} = F_g \cdot \cos\theta$

$F_g = m \cdot g$

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$\text{N2L}\ (x): F_{f_s} - F_{g_x} = 0$

$\text{N2L}\ (y): F_N - F_{g_y} = 0$

$(x)\quad \mu_s \cdot F_N - F_g \cdot \sin\theta = 0$

$(y)\quad F_N - F_g \cdot \cos\theta = 0$

$\hookrightarrow F_N = F_g \cdot \cos\theta$

$(x)\quad \mu_s F_g \cos\theta = F_g \sin\theta$

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$$\mu_s = \frac{F_g \sin\theta}{F_g \cos\theta}$$

$$\boxed{\mu_s = \tan\theta}$$

The higher the "mu", the better the shoe - you will not slip.

Dec 11-9:40 AM