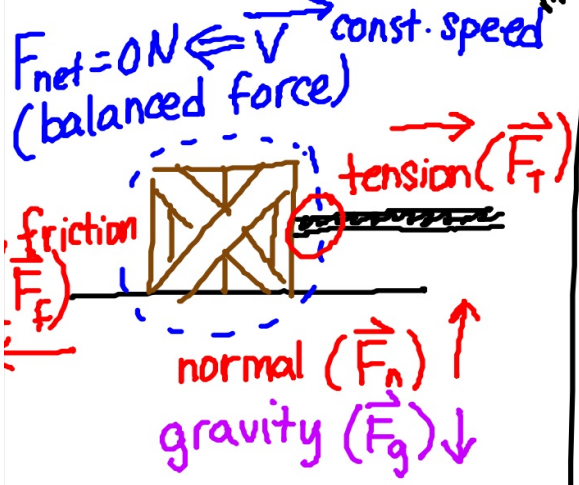
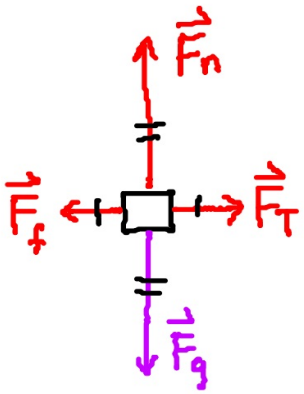
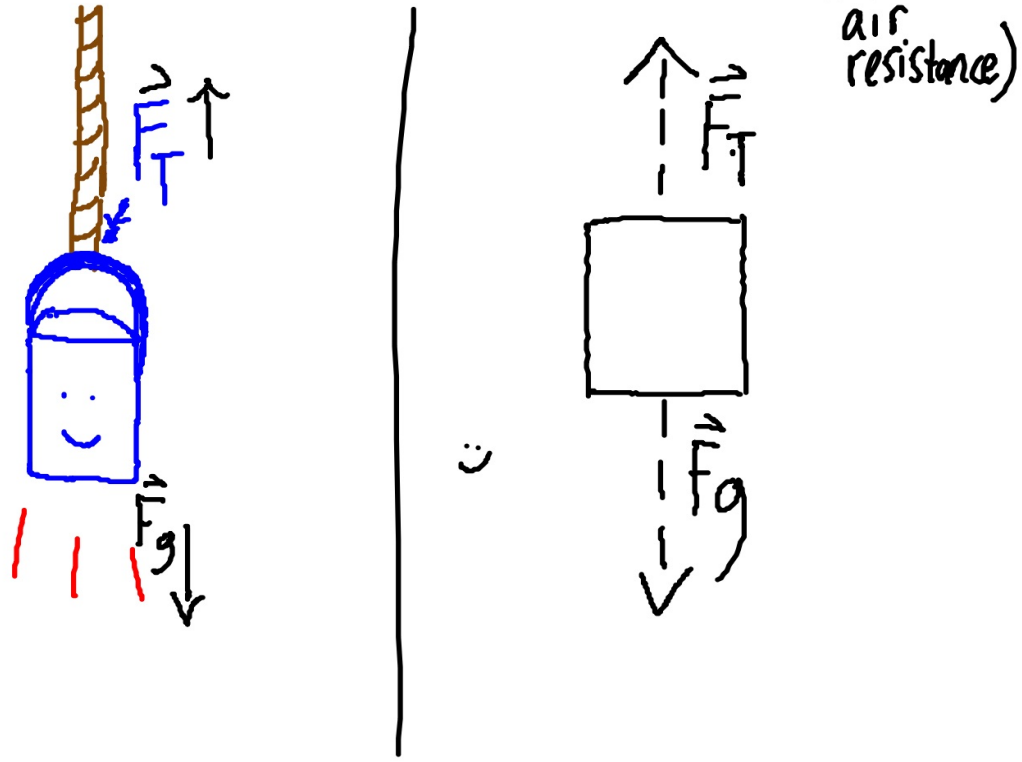
Flower pot falls freely from window (ignore air resistance)

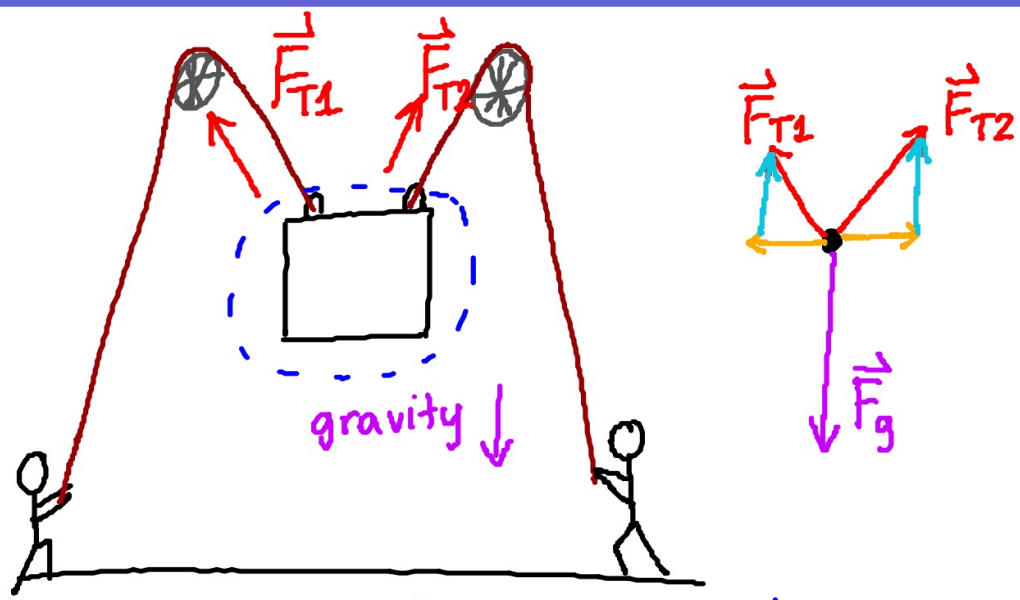
Cable pulls a crate at a const. speed across a horizontal surface. (include friction).





A rope lifts a bucket at a constant speed (ignore air resistance)





block is moving @ a const. speed

↳ ∴ $F_{net} = 0N$

therefore

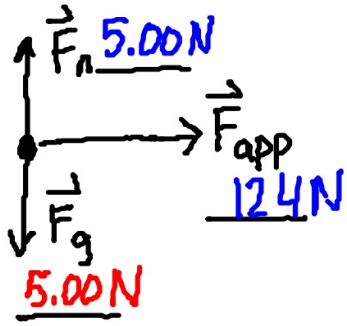
$$a = \frac{F_{net}}{m}$$

$$F_{net} = ma$$

$$F_g = mg$$

$$m = \frac{F_g}{g}$$

pg. 16 (e.)



$m = .500$ kg

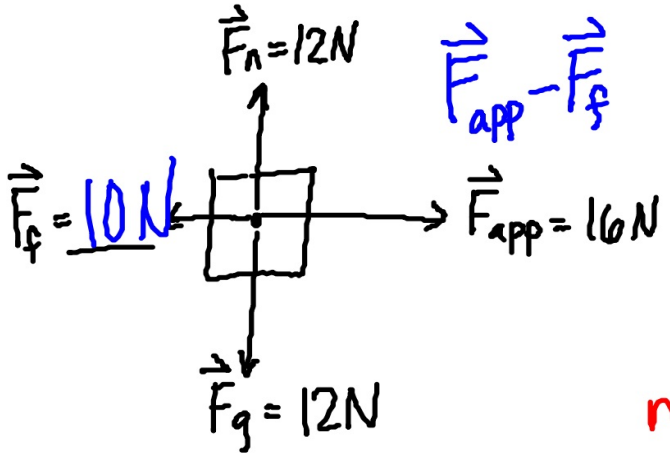
$a = 248 \frac{m}{s}$ right

$\Sigma F = 124$ N

$\vec{F}_g = mg = (.500 kg)(10\ m/s^2)$

$\vec{F}_g = 5.0$ N

$a = \frac{F_{net}}{m} = \frac{124 N}{.500 kg} = 248 \frac{m}{s^2}$ right



$\vec{F}_{app} - \vec{F}_f = F_{net} = 6$ N, right

$= (m)\, a$

$= (1.2 kg)(5 \frac{m}{s^2})$

$m = \frac{F_g}{g} = \frac{12 N}{10 \frac{m}{s^2}}$

$m = 1.2$ kg

✓ $a = 5\ m/s^2$ right

$\mu = .83$

$\vec{F}_f = \mu \cdot \vec{F}_n$

$\mu = \vec{F}_f / \vec{F}_n = \frac{10N}{12N}$

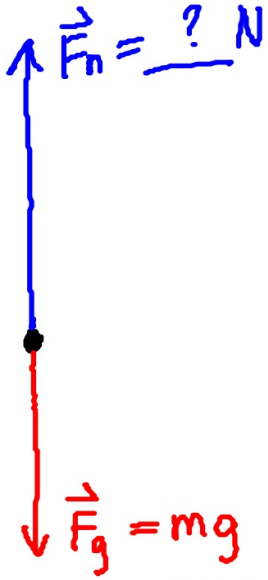
(p.26)
#6

Given:

$m = 52.1\ kg$

$a = 27.4\ m/s^2$, up

$g = \sim 10\ m/s^2$, down



521 N

$F_{net} = ma$

$= (52.1)$

$\vec{F}_{net} = \vec{F}_n - \vec{F}_g$

$+\vec{F}_g$ $+\vec{F}_g$