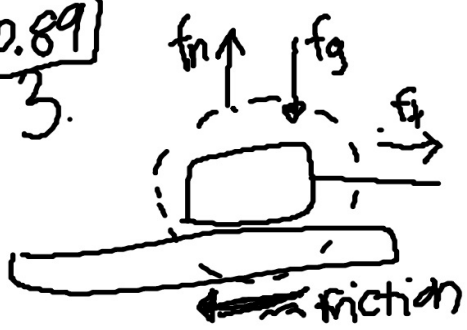
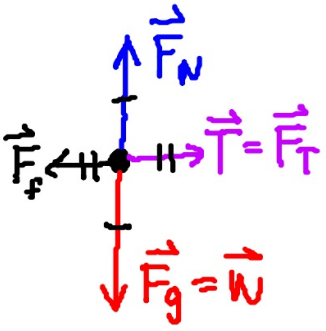
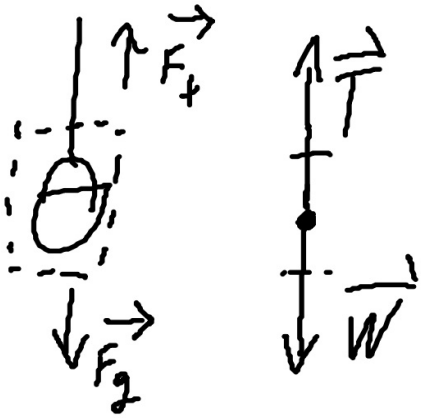
p.89
3.





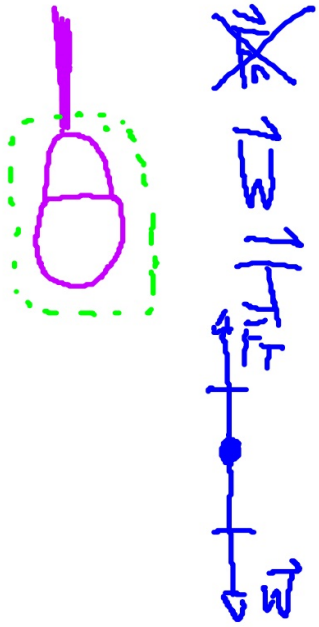
1. Draw a picture of situation.
2. Identify the system
3. Determine what forces (contact & field) are acting on the system
4. Convert system to a particle and draw force vectors.

#4 .



1. Draw a picture of situation.
2. Identify the system
3. Determine what forces (contact & field) are acting on the system
4. Convert system to a particle and draw force vectors.

#5



① Draw a picture of situation.

② Identify the system

③ Determine what forces (contact & field) are acting on the system

④ Convert system to a particle and draw force vectors.

Section 4.1 (p. 92)

- Net force $\Rightarrow \vec{F}_{net} \Rightarrow$ sum of all forces acting on an object.

  ↳ $\sum \vec{F}_x$ (sum of forces in x direction)

  ↳ $\sum \vec{F}_y$ (" " in y direction)

  ↳ $\vec{F}_{net} = \sum \vec{F}$

* Balanced force (Equilibrium) $\Rightarrow \vec{F}_{net} = 0N$

  ↳ $\sum F_x = 0N$ and $\sum F_y = 0N$

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

$F_{net} = ma$

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

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

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

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

Isolating variables in Newton's Second Law

Section 4.1

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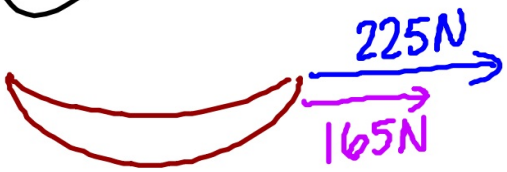
p. 93 Practice Problems

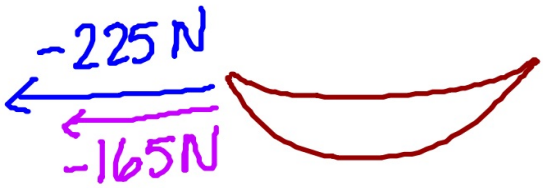
#6



$F_{net} = \sum F_x = 225N + 165N$

$F_{net} = 390N$

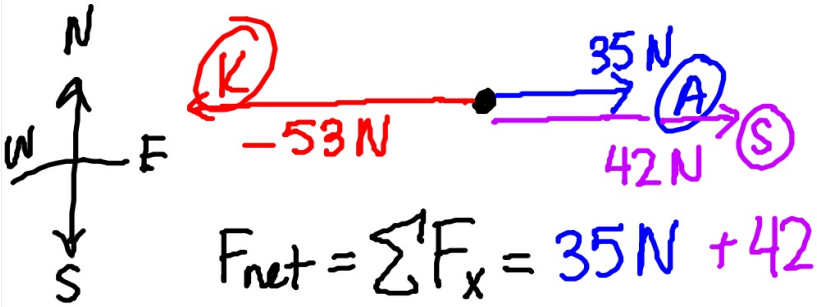
#7



$$F_{net} = \sum F_x = -225\,N + -165\,N$$

$$\boxed{F_{net} = -390\,N}$$

#8



$$F_{net} = \sum F_x = 35\,N + 42\,N - 53\,N$$

$$\boxed{F_{net} = 24\,N,\ East}$$