$W = F\Delta$

Work $= F\Delta$ NM or Joules

$(N)(M)$

$(400.5\ N)(.16)(30) = 1922.4\ J$

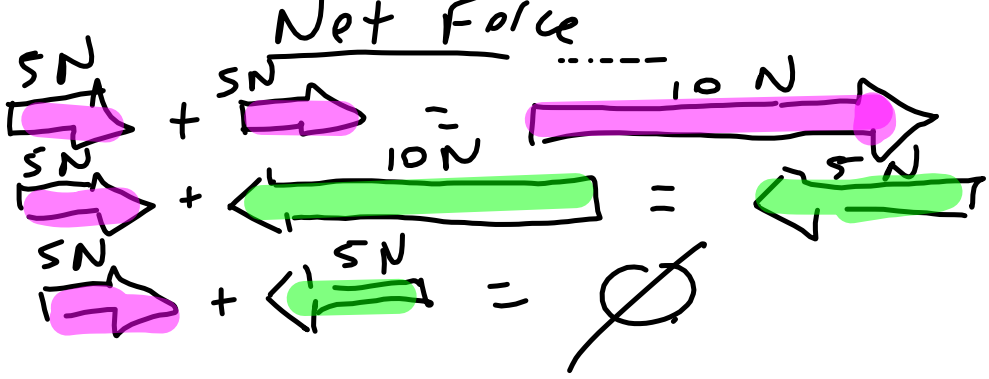
Newtons

lbs $\times$ 4.45 = ____ N

9.334

Force → push or pull
(strength & direction)

Units → (N) $\left(\frac{kgm}{s^2}\right)$ Newtons



Weight

$F = MA$

$(N) = (kg)\left(\frac{m}{s^2}\right)$

$= (1\ kg)(9.8) = 9.8\ (N)$

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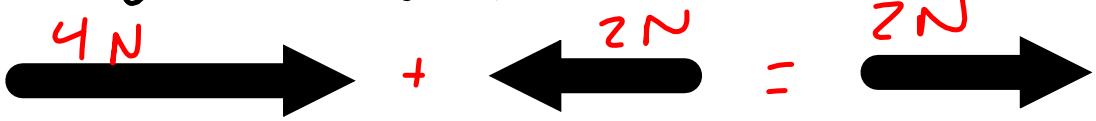
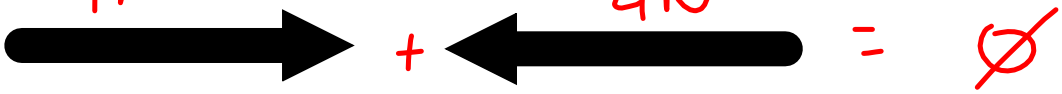
Unbalanced Forces



balanced forces



P. 340

friction - force of 2 surfaces rubbing

strength - 1. how hard they rub
2. type of surfaces

1.3242 Friction Typage

Static - Stationary (no move)

Sliding - duh!

rolling - duh!

fluid - liquid (ex. garden hose)
gas (air) ex. sky diving
plastic ex. magma

p. 347

- air resistance - fluid friction

↑ force on ↓ objects

- terminal velocity -

Force of air resistance = weight of object

1st Law of Motion

Inertia - resistance to Δ of motion

↑ mass → ↑ inertia

↓ mass → ↓ inertia

P. 350 2nd Law of Motion

$\frac{A}{1} = \frac{F}{m}$

$F = mA$

$F = (5kg)(10 \frac{m}{s^2})$

$F = 90\ N$

$F = mA$

$15N = (7kg)(A)$

$\frac{15N}{7} = \frac{(7kg)(A)}{7}$

$2.1 \frac{m}{s^2} = A$

$F = mA$

$\frac{12N}{10} = \frac{m(10 \frac{m}{s^2})}{10}$

$1.2\ kg = m$

p. 356 3rd Law of Motion!

- The total momentum of a system is conserved.

$$m v_b = m v_a$$

$$(60\,kg)\left(3\,\frac{m}{s}\right) = 180\,kg\,(v)$$

$$\frac{180\ \frac{kg\,m}{s}}{180} = \frac{180\ V}{180}$$

$$1\ \frac{m}{s} = V$$