

An object will \_\_\_\_\_ in the direction of  
the net \_\_\_\_\_ exerted on it.

Conclusions from experiment:

"a"  $\propto$  \_\_\_\_\_  
" $F_{net}$ " and "a" are \_\_\_\_\_.

"a"  $\propto$  \_\_\_\_\_  
"m" and "a" are \_\_\_\_\_.

Newton's 2<sup>nd</sup> Law:

- When a \_\_\_\_\_ is exerted on a object, the object  
\_\_\_\_\_ in the \_\_\_\_\_ of the \_\_\_\_\_.
- \_\_\_\_\_ is directly proportional to \_\_\_\_\_ and  
\_\_\_\_\_ proportional to mass.

equation for the law:

$F_{net}$  and a are in the same \_\_\_\_\_. (Show this with arrows:  $F_{net} = m a$ )

Insert units for "m" and "a"  $F_{net} = \text{_____} \times \text{_____}$

1 N = force required to accelerate a mass of 1 \_\_\_\_\_ 1 \_\_\_\_\_

In fundamental units, N = \_\_\_\_\_

Problem Set #1:

1.

2.

3.

How are weight and mass related?

$$F_{net} = \underline{\hspace{2cm}}$$



$$F_w = \underline{\hspace{2cm}}$$

$$F_w = m \times \underline{\hspace{1cm}} \frac{m}{s^2} \qquad m = \frac{F_w}{\underline{\hspace{1cm}} \frac{m}{s^2}}$$

Problem Set #2:

1.

2.

3.

A bowling ball weighs 48 N. With what net force must it be pushed to accelerate it at 3.0 m/s<sup>2</sup>?

During a throw, a pitcher exerts a force of 19 N on a ball weighing \_\_\_\_\_ N.

- a) What is the ball's acceleration?
- b) The ball moves \_\_\_\_\_ m before the pitcher releases it. With what speed does it leave the pitcher's hand?

Show What You Know:

1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_ 4. \_\_\_\_\_ 5. \_\_\_\_\_