Newton's Second Law

Acceleration is directly related to _____ in the direction of the force.

_____ = _____

_____ = _____

But there is a twist… acceleration in inversely proportional to the

_____ ___ ____ _____.

<u>Newton's Second Law states</u>

- The units used for force are _____ (____)

- The units used for mass are _____ (____)
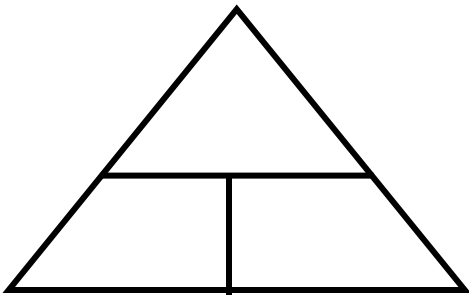
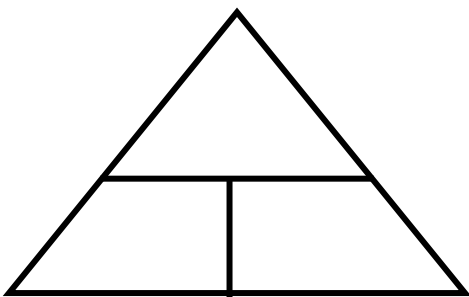- The acceleration units are _____ (____)

Speed is

Velocity is

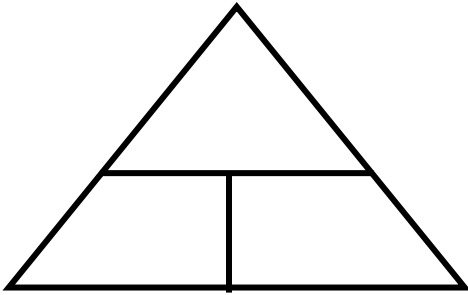**Acceleration** is

Calculating Speed

Given Distance & Time
Formula =

Given Speed & Time
Formula =

Given Distance & Speed
Formula =

Calculating Acceleration

Formula =

Let's Practice:

1. A roach moves down the hall at 1.2 m/s. When he sees the janitor coming down the hall, he begins to run. After 3.2 s, he is moving at 3.6 m/s. What is his acceleration?

2. While waiting for his Mom to come out of the hairdresser's, Sean accidentally puts the car in gear and it begins to roll forward. How far would the vehicle travel if it moved at 34 m/s for 2.5 s?

3. While showing off for some girls at the skate park, Josh D crashes. After the crash he tumbled 30 m in 4.2 s, what was his speed in m/s?

4. Colin skateboards down the sidewalk in front of the school, traveling at 24 km/h. How much time would it take him to travel 6.0 km?