**Calculation a variable using 3 equations**

**\*\*Some times you need to use more than one equation to solve for a desired variable (like “D” or distance.**

**Example:**

**If you dropped a ball for 5.5 s, what is the distance that it fell?**

**1st.) Calculate the instantaneous velocity using V (at the end of the drop) = G x T.**

**Vf = 9.8 m/s2 x 5.5 s = 53.9 m/s**

**2nd.) Calculate the average velocity using:**

**Vf = AV x 2.**

**53.9 m/s = AV x 2.**

**AV = 53.9 / 2 = 26.95 m/s**

**3rd.) Calcualte the Distance using:**

**AV = total distance / total time.**

**26.95 m/s = D / 5.5 s (original time)**

**D = 26.95 x 5.5 = 148.225 m.**