

# MOTION EQUATION Notes

1. **SPEED**: (m/s)

$$\text{speed} = \frac{\text{distance}}{\text{time}}$$

2. **AVERAGE SPEED**: (m/s)

$$\text{avg. speed} = \frac{D_f - D_i}{T_f - T_i}$$

$D_f$  = Final distance

$D_i$  = Initial distance

$T_f$  = Final time

$T_i$  = Initial time

3. **VELOCITY**: (m/s and direction)

$$\text{velocity} = \frac{\text{distance}}{\text{time}}$$

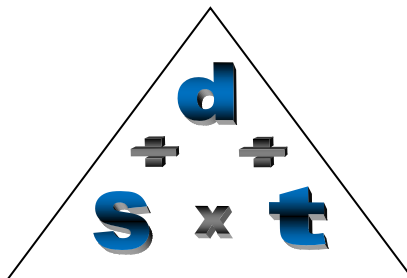
4. **DISTANCE**: (meters)

$$\text{Distance} = (\text{speed})(\text{time})$$

5. **TIME**: (seconds)

$$\text{Time} = \frac{\text{distance}}{\text{speed}}$$

## The Magic Speed Equation Triangle



**Cover** the letter you want to **find** and then just **do the math** with what is left behind.

6. **ACCELERATION**: (m/s<sup>2</sup>)

$$\text{Acceleration} = \frac{V_f - V_i}{T_f - T_i}$$

$V_f$  = Final velocity

$V_i$  = Initial velocity

$T_f$  = Final time

$T_i$  = Initial time