Let’s Calculate…

The 3 formulas for Speed, Time & Distance:

$$\text{Speed} = \frac{\text{Distance}}{\text{Time}}$$

$$\text{Time} = \frac{\text{Distance}}{\text{Speed}}$$

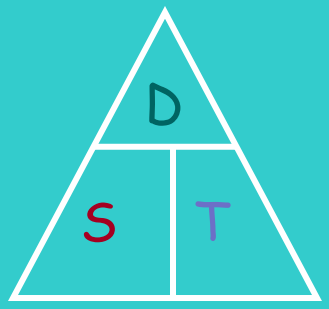
$$\text{Distance} = \text{Speed} \times \text{Time}$$

Solving for Speed

Solving for Time

Solving for Distance

Remember them from this triangle:



Speed

Find the average speed of the car:

Distance: 80 miles

Time: 3 hours

Speed

Find the average speed of the airplane:

Distance: 2,000 miles

Time: 3.5 hours

Velocity

Velocity is the same as speed, but remember you have to have direction!

$V = d / t$

Velocity

- Calculate the velocity of a mountain climber if that climber is moving northeast at a pace of 1.6 km in 1.4 hours?

Combining Velocities

When you combine two velocities that are the **same direction** you **ADD** to get the resultant velocity.

Combining Velocity

If a train is going 20 mph east and a passenger is going 2 mph east (the same direction). What is the passengers resultant velocity?

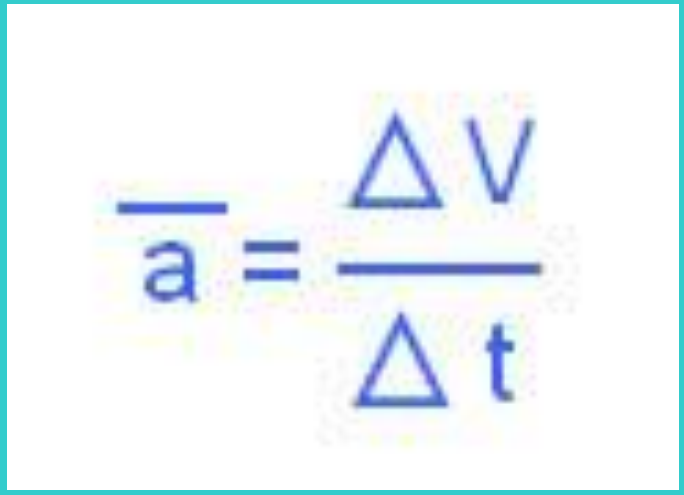
Combining Velocities

When you combine two velocities that are the **opposite direction** you **SUBTRACT** to get the resultant velocity.

Combining Velocity

If a train is going 20 mph east and a passenger is going 2 mph west (the opposite direction). What is the passengers resultant velocity?

Average Acceleration



Average Acceleration

A roller coaster car rapidly picks up speed as it rolls down a slope. As it starts down the slope, its speed is 4 m/s. But 3 seconds later, at the bottom of the slope, its speed is 22 m/s. What is its average acceleration?