Distance, Rate and Time

- d = distance traveled
  - this will represent the total amount
- r = rate
  - this represent the speed
  - needs to be a unit rate (ex: miles per hour)
- t = time
  - make sure your time units matches the time units in your speed

Formula

$$d = rt$$

Example

A car travels on the interstate at a constant speed. The table shows the distances the car traveled.

Time (hours)	Distance (miles)
0.25	15.5
0.5	31
4	248
6	372

→ ×2

a) Determine the car's rate in miles per hour.

$$\frac{31 \text{ mi}}{0.5 \text{ hr}} = \frac{62 \text{ mi}}{1 \text{ hr}}$$

×2

b) Write an equation to determine the distance traveled after an amount of time elapsed.

$$d = 62t$$

c) Determine how far the car will travel after 2.5 hours.

$$d = 62(2.5)$$
$$d = 155$$

The car will travel 155 miles

Practice

A bus travels on the highway at a constant speed. The table shows the distances the bus traveled.

Distance (kilometers)	Time (hours)
27.5	0.5
55	1
110	2
220	4

a) Determine the bus's rate in kilometers per hour.

$$\frac{55 \text{ km}}{1 \text{ hr}}$$

b) Write an equation to determine the distance traveled after an amount of time elapsed.

$$d = 55t$$

c) Determine how many hours it will take the bus to travel 96.25 kilometers.

$$\frac{96.25}{55} = \frac{55t}{55}$$

$$1.75 = t$$

It will take the bus 1.75 hours.