DISTANCE FORMULA

D= RT

Distance Rate x Time

Distance = rate x time

Let's Try One Together

A Deer Runs 50 feet in 5 seconds. How far does it run?

Distance = rate x time

D= RT

Distance = 50 x 5

Distance = 250 feet

*****REMEMBER THE PROBLEM WILL GIVE YOU THE INFORMATION, JUST PLUG IT INTO THE EQUATION!**

WORK FORMULA

$$W = RT$$

Work = Rate x Time

Work = rate x time

Example:

Solve.
Bill can print 8 nature photos in 5 minutes. How many nature photos can he print in 30 minutes?

Choose a formula.

You need to know *how many*, so use the work formula.

$w = rt$

The rate is $\frac{8 \text{ photos}}{5 \text{ min}}$. The time is 30 min.

**Remember to:
multiply the numerators
multiply the denominators

$$\frac{8 \text{ photos}}{5 \text{ mins}} \times \frac{30 \text{ minutes}}{1}$$

***REMEMBER THE PROBLEM WILL GIVE YOU THE INFORMATION, JUST PLUG IT INTO THE EQUATION!

The word *rate* is often used in place of the word *speed*.

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

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

$$\text{time} \cdot \frac{\text{distance}}{\text{time}} = \text{rate} \cdot \text{time}$$

$$\cancel{\text{time}} \cdot \frac{\text{distance}}{\cancel{\text{time}}} = \text{rate} \cdot \text{time}$$

$$d = rt$$

The distance formula is $d = rt$. Use this formula when you know the rate and time and are looking for a distance.

When you know the distance and time and are looking for rate, you can solve for r by dividing both sides by t.

When you know the distance and rate and are looking for time, you can solve for t by dividing both sides by r.

The distance formula can be rewritten in 3 ways.

$$d = rt$$

$$\frac{d}{t} = r \qquad \frac{d}{r} = t$$

Solve.
A truck driver drove 189 miles in 3 hours and 30 minutes. Find his rate of speed.

Identify the given information.

$d = 189$ miles
$t = 3.5$ hours

60 minutes equals 1 hour, so 30 minutes equals 0.5 hour.

Choose a formula.

Use $r = \frac{d}{t}$.

We know the distance the truck drove and the time it took. We want to find the rate of speed.

Use the formula.

$$r = \frac{d}{t}$$

$$= \frac{189 \text{ miles}}{3.5 \text{ hours}}$$

$$= 54 \text{ miles/hour}$$

The truck driver drove at a speed of 54 miles per hour.

A dolphin is swimming at a rate of 3.5 meters per second. How long does it take the dolphin to swim 42 meters?

Identify known information:
$r = 3.5$ m/s
$d = 42$ m

Use the formula for time: $t = \frac{d}{r}$

$$t = \frac{\square \text{ m}}{\square \text{ m/s}}$$

$$t = \square \text{ s}$$