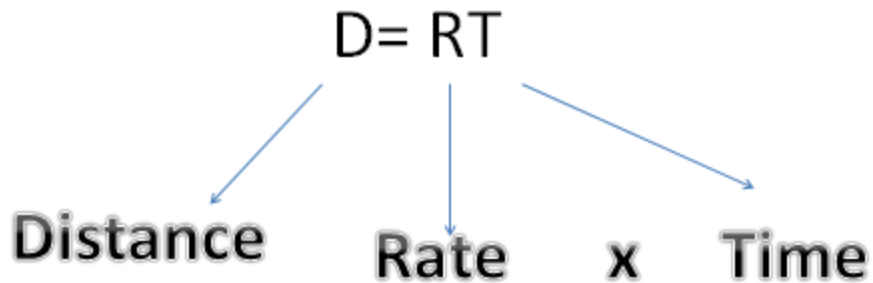


DISTANCE FORMULA



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

$$D = RT$$

$$\text{Distance} = 50 \times 5$$

$$\text{Distance} = 250 \text{ feet}$$

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

WORK FORMULA

$$W = RT$$

Work Rate x Time

$$\text{Work} = \text{rate} \times \text{time}$$

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.

$$d = rt$$

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

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

Solve.

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

➤ **Identify the given information.**

$$d = 189 \text{ miles}$$
$$t = 3.5 \text{ hours}$$

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:

$$r = 3.5 \text{ m/s}$$

$$d = 42 \text{ m}$$

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

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

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