Key

JOG your memory...remember that middle school math:

Write $\frac{1}{2}$ as a percent: **50%**

Write .5 as a percent: **50%**

Write $\frac{1}{4}$ as a percent: **25%**

Write 1.28 as a percent: **128%**

move decimal over 2 spaces

Write $\frac{1}{12}$ as a percent: **8.39%**

Write .178 as a percent: **17.8%**

STOP! This means YOU.

STOP....In the name of **MATH**! We use **percents** ALL the time in real life. EVERY TIME we shop or go out to eat, or check taxes, or....... I could keep going.

If you can do the problem in your head OR quickly with a a calculator, there is NO NEED for a formal set up!!!

Partner Chat: See if you can solve the following WITHOUT a calculator!

1. You go out to mini golf with a big group of friends, and the total bill is $75. You have a coupon to save 10%. How much money do you save on your total?

   $7.50

2. You go out to dinner with your parents, and the total bill is $90. The service was great, and your parents want to tip 20%. How much money should they add to the bill?

   $18

Can you find the following percents? You may use your calculator.

4. What is 35% of 70?

   .35(70)

   24.5

5. 18 is what percent of 96?

   $\frac{18}{96} = .1875$ **18.75%**

If you aren't sure ... then what!?!? Sometimes a formal set up may help you – although NOT always necessary.

You can represent "a is p percent of b" using a **proportion**:

$$\frac{is}{of} = \frac{\%}{100}$$

You can represent "a is p percent of b" using the **equation**:

is = % · of

*** % as a decimal

Let's try BOTH ways, then YOU decide which you like better.

Ex. 1: What percent of 25 is 17?

$\frac{17}{25} = .68$

$\boxed{68\%}$ ⟷ $\frac{17}{25} = \frac{x}{100}$

$25x = 1700$

$\boxed{x = 68\%}$

or

$\text{is} = \% \cdot \text{of}$

$\frac{17}{25} = \frac{x \cdot 25}{25}$

$.68 = x$

$\boxed{68\%}$

Ex. 2: What number is 45% of 92?

$\frac{x}{92} = \frac{45}{100}$

$100x = 4140$

$x = 41.4$

$x = .45(92)$

$\boxed{x = 41.4}$

Ex. 3: 50 is 125% of what number?
(You try – with whichever method you prefer)

$50 = 1.2\overline{5} \cdot x$

$\boxed{40 = x}$

Now time to apply this math to the REAL WORLD!

Ex. 4: You keep your eye out at the clearance racks at the mall – your favorite shirt is currently 25% off! Yay! How much money will you pay for a shirt that was originally $32.00.

① $32.00(.25) = 8.00$

② $32 - 8 = \boxed{\$24.^{00}}$

Ex. 5: You need a new pair of shoes for basketball. They are $79.99 with 35% off.
   a. What is the price of the shoes (before taxes). $.65(79.99) \approx \$51.99$

or ... $79.99(.35) = 27.9965$

$79.99 - 27.9965 \approx 51.99$

   b. If tax is 8%, how much will you pay in taxes? $.08(51.99) = \$4.16$

CHALLENGE: You went to the grocery store and paid $2.79 for a box of your favorite cereal. You know that the cereal is regularly $3.99. What percentage did you save on this purchase?

$\frac{2.79}{3.99} = 70\%$

you paid 70% of the original price... so you saved 30% :)