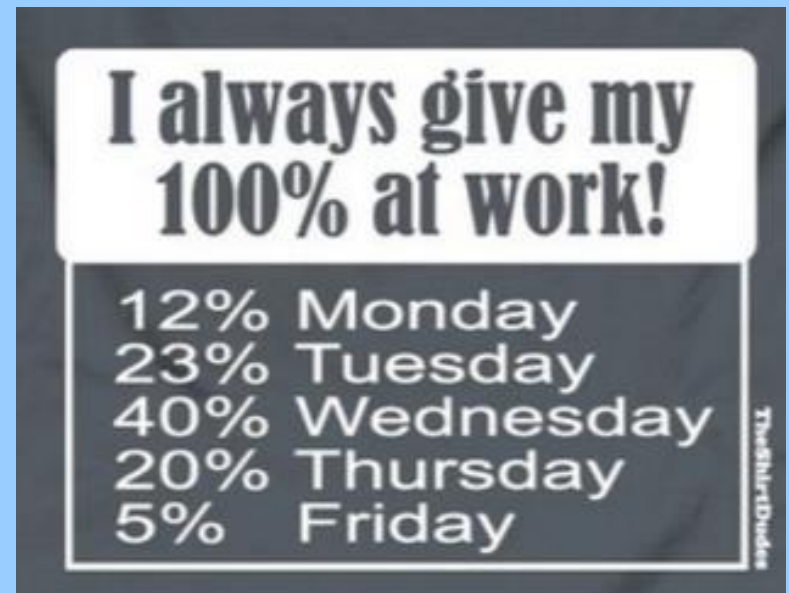# Percent Proportion

# Percent

Means "*per one-hundred*" or '*out of a hundred*'.

The full, or entire amount of something is **100%**.



I always give my 100% at work!

12% Monday
23% Tuesday
40% Wednesday
20% Thursday
5% Friday

# Percents

## Remember these equalities:

$$100\% = \frac{100}{100} = 1.00$$

$$50\% = \frac{50}{100} = 0.50$$

$$25\% = \frac{25}{100} = 0.25$$

$$10\% = \frac{10}{100} = 0.10$$

# The Percent Proportion(s)

You can use a proportion to solve most percent problems.

Remember: the percent will always be related to a hundred.

# The Percent Proportion(s)

"of" is the number with the word "of"

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

The percent is % always the bottom over 100.

This proportion can be used when dealing with simple percent statements such as:
"What is 10% of 200?"
"20 is what percent of 200?"
"20 is 10% of what number?"

**50 is** what percent **of 230**?

Use the proportion.

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

$$\frac{50}{230} = \frac{x}{100}$$

*Cross multiply to get the answer.*

**21.73913043**
**or**
**x = 21.7%**

**50 is 21.7% of 230**

# What is 85% of 40?

Use the proportion.

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

$$\frac{x}{40} = \frac{85}{100}$$

*Cross multiply to get the answer.*

$$x = 34$$

**34 is 85% of 40**

**25%** of what number **is 400**?

Use the proportion.

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

$$\frac{400}{x} = \frac{25}{100}$$

*Cross multiply to get the answer.*

**x = 1600**

**25% of 1600 is 400**

# What is 175% of 80?

Use the proportion.

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

$$\frac{x}{80} = \frac{175}{100}$$

*Cross multiply to get the answer.*

$$x = 140$$

**140 is 175% of 80**

19 is 25% of what number?

What percent of 256 is 64?

What is 45% of 178?

**19 is 25% of what number?**

Use the proportion.

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

$$\frac{19}{x} = \frac{25}{100}$$

*Cross multiply to get the answer.*

$$x = 76$$

**19 is 25% of 76**

# What percent of 256 is 64?

Use the proportion.

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

$$\frac{64}{256} = \frac{x}{100}$$

*Cross multiply to get the answer.*

$$x = 25\%$$

**25% of 256 is 64**

What *number* is…

What is 45% of 178?

Use the proportion.

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

$$\frac{x}{178} = \frac{45}{100}$$
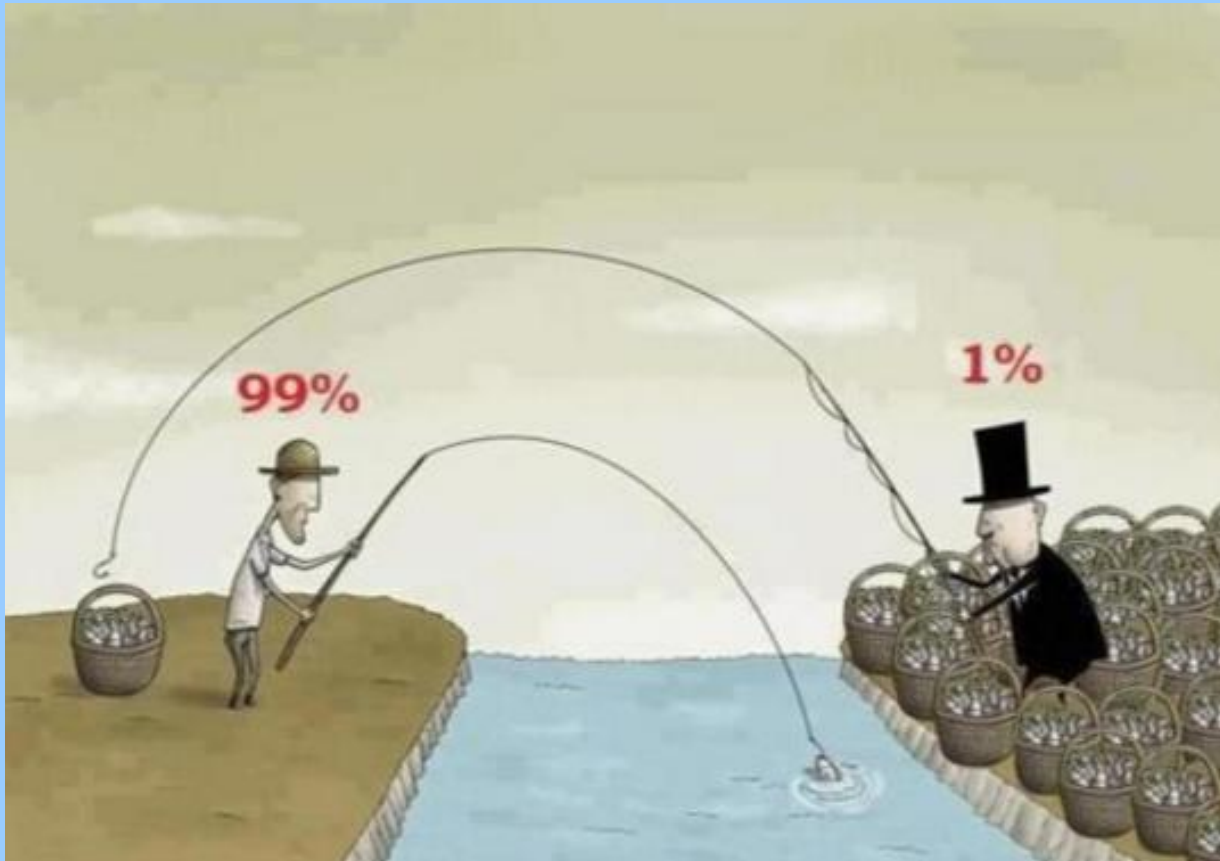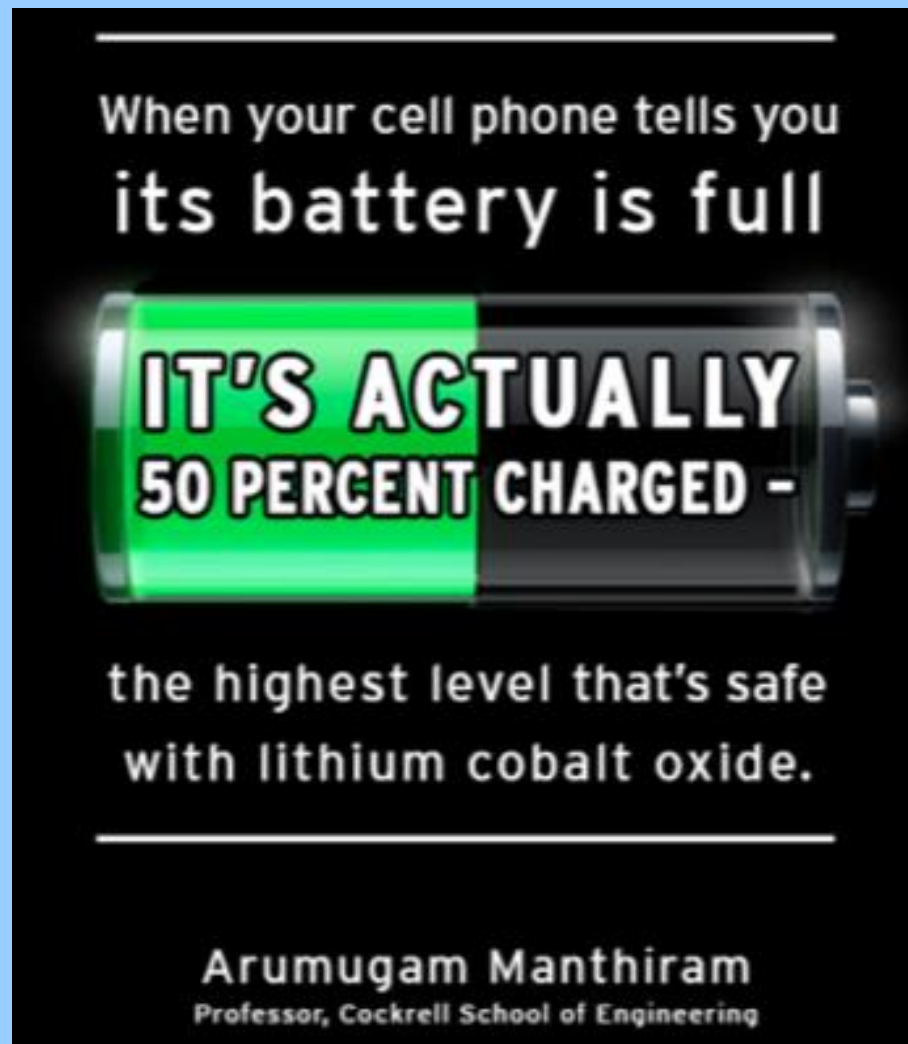
*Cross multiply to get the answer.*

**x = 80.1**

**80.1 is 45% of 178**

# Word Problems

# What is the difference between the 1% and the other 99%?

# What does 100% charged mean with your cell phone battery?

# When you're home alone and someone knocks on your door, what do you do?

When you're home alone & someone knocks on your door.

10% say "who is it?"
64% look through the peep hole.
25% open the door
1%-Crawl around on the ground like a ninja and look through the window very quietly to make sure it isn't a masked murder.

# What percentage see the present danger?



99% of all men DO NOT see **King Kong** in the picture!

# Practice Time

Any questions? Let's practice some HW problems.