

Part 4-1 → Percent Rules the World

Percentages are the most common way people use data

Percentages are therefore how we explain and understand the world.

When lawyer activists argued in court that certain police tactics were ~~being~~ being applied in violation of the U.S. Constitution's requirement of equal protection under law, what did they use to make their case?

Percents.

When Daymond John and other sharks on shark tank argue how much stock in a company they should get for a 1 million dollar investment, what do they use?

Percents.

Why?

Because percents rule the world!

- A Percent is a Ratio where order matters
- The key move is cross-multiplication
- The formula is:

$$\frac{\text{Part}}{\text{whole}} = \frac{\%}{100}$$



100 is just always 100

Example:

Is it correct that 18 is 90% of 20?

↙
This is the Part

↓
This is the %

↓
This is the
WHOLE
key
"of"

$$\frac{\text{Part}}{\text{whole}} = \frac{\%}{100}$$

$$\frac{18}{20} = \frac{90}{100}$$



$$1800 = 1800$$

Yes! 18 is 90% of 20!

When the % is less than 100,
the Part is less than the Whole

Example: 7 is 50% of 14

$$\frac{\text{Part}}{\text{Whole}} = \frac{\%}{100} \quad \frac{7}{14} = \frac{50}{100}$$

When the % is more than 100,
the Part is greater than the Whole

Example: 48 is 120% of 40

$$\frac{\text{Part}}{\text{Whole}} = \frac{\%}{100} \quad \frac{48}{40} = \frac{120}{100}$$

When the % is exactly 100,
the Part is exactly equal to the Whole

Example: 57 is 100% of 57

$$\frac{\text{Part}}{\text{Whole}} = \frac{\%}{100} \quad \frac{57}{57} = \frac{100}{100}$$