

Percent is a special fraction whose denominator is 100.

The numerator is the number in front of the “%” symbol.

Example

$$\begin{aligned}
 \text{a) } 73\% &= \frac{73}{100} & \frac{1}{2}\% &= \frac{1/2}{100} \\
 & & &= \frac{1}{200}
 \end{aligned}$$

Since a percent is a fraction, all the rules for fractions will apply for percents, just as they did for decimals.

For instance, when you added fractions, you found a common denominator, made equivalent fractions, added the numerators, and brought down the denominator. With percents, you already have a common denominator of 100, therefore we merely add the numerators.

Example

$$5\% + 12\% = 17\%$$

If I wanted to multiply percentages, I would refer to the algorithm for multiplying fractions; multiply numerators , then multiply denominators.

Example

$$5\% \times 12\% = \frac{60}{10000}$$

Note; the 10,000 came from multiplying the denominators, 100 x100.

Piece of cake, don't you think?

Percents are used to convey information so it is familiar to others. All percents do is group things by 100.

One way of solving problems involving percents is through the Percent Proportion.

Percent Proportion		
$\frac{\text{Part}}{\text{Total}}$	=	$\frac{\%}{100}$

This proportion will allow you to solve almost all problems involving percents.

Let's look at a couple of problems. and solve them using the percent proportion.

Example

Dave reported that 7 out of 35 members in the club paid their dues, what percent paid their dues?

We can immediately fill in the 100, then determine where the other numbers go.

$$\frac{\quad}{\quad} = \frac{\quad}{100}$$

Since 7 represents the part that paid their dues, that number goes on top. 35 represent the total, and N represents the number we are looking for.

$$\frac{7}{35} = \frac{N}{100}$$

Cross multiplying we have 35 N = 700, therefore

$$N = 20\%$$

Example

Twenty percent of the sophomore class earned an A in math. If 136 students received an A, how many students are in the sophomore class.

Filling in the percent proportion, we have

$$\frac{136}{N} = \frac{20}{100}$$

The total number of students in the sophomore class would be 680.

While there are other ways of solving problems involving percents, the percent proportion will get you there on a regular basis.