Calculating Percent %

Converting Fraction, Decimal, and Percent

From Fraction to Decimal to Percent:

To convert a fraction to a decimal, you must divide the numerator (top number) by the denominator (bottom number):

Ex.: $\frac{3}{4}$ $3 \div 4 = \mathbf{0.75}$

Once you have the decimal equivalent, you can convert to % by multiplying the decimal by 100:

Ex.: 0.75 x 100 = **75%**

From Percent to Reduced Fraction:

To write the reduced fraction that the percent represents, first write that percent over a denominator of 100:

Ex.: $75\% = \frac{\mathbf{75}}{\mathbf{100}}$

Once you have written the fraction, reduce it by dividing both numbers by their greatest common factor:

Ex.: Both numbers in the fraction can be divided by 25.

$75 \div 25 = 3$, and $100 \div 25 = 4$ So the reduced fraction is $\frac{\mathbf{3}}{\mathbf{4}}$

Calculating the Percent of a Number:

Method 1: Use the decimal equivalent, then multiply by the amount

Ex.: 30% of 200 (30% is $\frac{30}{100}$)

30 ÷ 100 = **0.3**

Calculation: 0.3 x 200 = 60

*If this were a discount on the price of an item, you would then remove $60 from the $200: 200 - 60 = $140 (sale price)

*If this were a tax, you would add $200 and $60: 200 + 60 = $260 (final price)

Continued:

Method 2: Create a proportion and solve for the missing term

Same example: 30% of 200

Proportion: $\frac{30}{100} = \frac{\square}{200}$

You can use the scale factor or cross-product method to solve

Ex.: cross-product 30 x 200 ÷ 100 = **60**

Determining 100%:

Method 1: Create a proportion and solve for the missing term

Ex.: 40 % of what amount is = 12

Proportion: $\frac{40}{100} = \frac{12}{\square}$

You can use the scale factor or cross-product method to solve

Ex.: cross-product 12 x 100 ÷ 40 = **30**

Continued:

Method 2: working backwards

Same example: 40% of what amount is = 12

Calculation: 0.4 x ☐ = 12

Working backwards: start with the answer, and do the inverse (divide)

12 ÷ 0.4 = 30

Continued:

Method 3: solve algebraically

Same example: 40% of x = 12

Calculation: $0.4x = 12$

$$x = \frac{12}{0.4}$$

$$x = \mathbf{30}$$