

Percents

Method for expressing parts of a whole as a fraction with 100 as the denominator
The symbol for percent (parts of whole as a 100 th) is the % sign.

$$45 \% = 45 / 100 = 0.45$$

100% is the whole

$$100 \% = 1.00$$

Number greater than 100% are larger than a whole number

$$150 \% = 1.5$$

Converting Percent to Decimals

Drop the % sign, then move decimals 2 places to the left:

$$34.56 \% \rightarrow 0.3456 \quad 10 \% \rightarrow 0.10$$

Converting Decimals to Percent

Move the decimal point 2 places to the right and add a % sign:

$$0.789 = 78.9 \% \quad 1.23 \rightarrow 123 \%$$



Converting Percent to Fractions

Drop the % sign, create a fraction with the number by using 100 as the denominator
If needed, multiply numerator & denominator by appropriate power of 10 to clear decimal
Reduce, if appropriate:

$$60 \% \rightarrow 60 / 100 \rightarrow 3/5 \quad 12.5 \% \rightarrow 12.5 / 100 \rightarrow 125 / 1000 \rightarrow 1/8$$

Converting Fractions to Percent

Convert fraction to decimal (by division of numerator by denominator)
Then move decimal 2 places to the right and add a % sign:

$$7/8 \rightarrow 0.125 \rightarrow 12.5 \%$$

Percentage of Number

To find X % of a number \rightarrow Convert % to a decimal and multiply:

56 % of 128

$$0.56 \times 128 = 71.68$$

X is what % of Y → Divide X by Y and convert to percentage

5 is what percent of 20?

$$5 / 20 = 0.25 \rightarrow 25 \%$$

Percent Increase

Amount Increase = Original Amount \times (percent increase/100)

New Amount = Original Amount \times (1 + percent increase/100)

Percent Decrease

Percent Decrease = Original Amount \times (percent decrease/100)

New Amount = Original Amount \times (1 - percent decrease/100)

