

# Ratios

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- A ratio is a comparison between quantities of the same type or with the same units.
- Ratios can be expressed using words, ratio notation, fractions (and sometimes as a percent).

Ex. 3 to 8, 3:8,  $\frac{3}{8}$ , 0.375, 37.5%

- Ratios can be classified by:

I. Number of Terms: 2-Terms

3-Terms ⊗ can NOT use a FRACTION

II. Type of comparison:

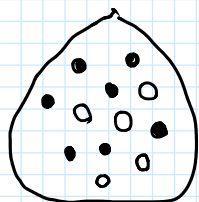
- Part · to · part

- part · to · whole ⊗ can express as PERCENT

- Ratios can also be reduced (just like a fraction) and never include units.

Examples:

Ex. ① write the ratio of white marbles to black marbles in all 3 ways:



white to black (order matters)

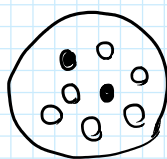
5 to 7

5:7

$\frac{5}{7}$

\* Part-to-part ratio so NO percent!

Ex. ② write the numbers of black to all marbles:



\* Reduce \*

2 to 8

2:8

$\frac{2}{8}$

$\xrightarrow{2 \div 8}$

0.25

$\xrightarrow{\times 100}$

25%

1 to 4

1:4

$\frac{1}{4}$

same

0.25

25%

\* Part-to-whole so include percent