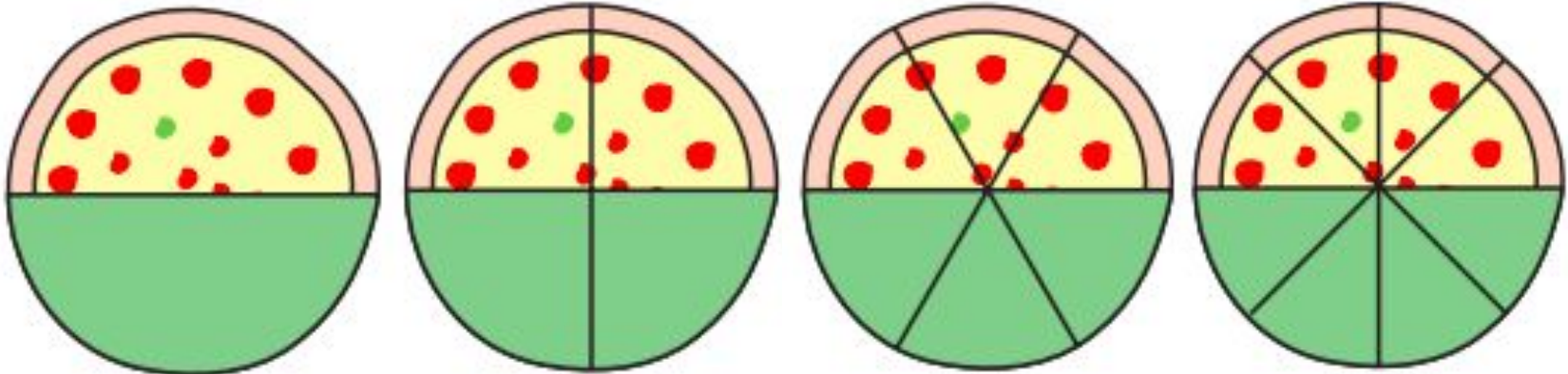


# EQUIVALENT FRACTIONS



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$$\frac{1}{2} = \frac{2}{4} = \frac{3}{6} = \frac{4}{8}$$

These fractions are called **equivalent fractions**.

# EQUIVALENT FRACTIONS

Equivalent fractions:

- **represent the same number** (i.e. mark the same place on the number line)
- are produced by:
  - multiplying the numerator and denominator by the same number
  - dividing the numerator and denominator by the same number

# EQUIVALENT FRACTIONS

Example 1:

The diagram illustrates the generation of equivalent fractions from  $\frac{2}{3}$ . It shows the sequence:  $\frac{2}{3} = \frac{4}{6} = \frac{6}{9} = \frac{8}{12} = \frac{10}{15} \dots \text{etc.}$  Red arrows point from the first fraction to each subsequent one. The arrows from  $\frac{2}{3}$  to  $\frac{4}{6}$  are labeled 'x2', to  $\frac{6}{9}$  'x3', to  $\frac{8}{12}$  'x4', and to  $\frac{10}{15}$  'x5'. There are also curved arrows above and below the sequence, each labeled with 'x2', 'x3', 'x4', and 'x5' at their respective points.

Example 2:  $\frac{2}{7} = \frac{4}{14} = \frac{6}{21} = \frac{10}{35} = \frac{242}{847}$

Fractions should always be written in their simplest forms.

So at the end of a calculation where the result is a fraction, you should check that the fraction is in its simplest form.

# SIMPLIFYING FRACTIONS

The **simplest form of a fraction** is when the numerator and denominator have been divided by the highest common factor (HCF).

example:

$$\frac{28}{63} = \frac{4 \times 7}{9 \times 7} = \frac{4}{9} \quad (7 \text{ is the HCF of } 28 \text{ and } 63)$$

The fraction  $\frac{4}{9}$  cannot be simplified anymore;  $\frac{4}{9}$  is the simplest form of  $\frac{28}{63}$