



MYP MATHEMATICS

FRACTIONS

Equivalent fractions

If you multiply or divide the numerator and denominator with the same number, the value of the fraction does not change. These fractions are called equivalent fractions, they have the same value, but they just look different.

$$\frac{2}{3} = \frac{2 \times 5}{3 \times 5} = \frac{10}{15}$$

$$\frac{12}{30} = \frac{12 \div 6}{30 \div 6} = \frac{2}{5}$$

Adding & subtracting fractions

- Equalise the denominators (make them the same by using LCM)
- Add/subtract the numerators
- Write the common denominator afterwards

$$\frac{2}{3} + \frac{1}{5} = \frac{2 \times 5}{3 \times 5} + \frac{1 \times 3}{5 \times 3} = \frac{10}{15} + \frac{3}{15} = \frac{13}{15}$$

$$\frac{4}{3} - \frac{5}{7} = \frac{4 \times 7}{3 \times 7} - \frac{5 \times 3}{7 \times 3} = \frac{28}{21} - \frac{15}{21} = \frac{13}{21}$$

Multiplying fractions

- "NUM-NUM DEN-DEN"
- Multiply the numerator with numerator and denominator with the denominator.
- Simplify if needed.

$$\frac{2}{3} \times \frac{1}{5} = \frac{2 \times 1}{3 \times 5} = \frac{2}{15}$$

Dividing fractions

- Write the first fraction as it is
- Reciprocate the second fraction (flip it upside down)
- Multiply them together
- Simplify if needed.

$$\frac{2}{3} \div \frac{4}{5} = \frac{2}{3} \times \frac{5}{4} = \frac{10}{12} = \frac{5}{6}$$

Simplifying fractions

If the numerator and denominator have a common factor you can divide both with this factor and reduce the fraction.

$$\frac{20}{30} = \frac{20 \div 10}{30 \div 10} = \frac{2}{3}$$

If there is no common factor other than 1, then the fraction is in its simplest form.

$$\frac{12}{36} = \frac{6}{18} = \frac{3}{9} = \frac{1}{3}$$