Your notes

KS3 Maths: revision notes

# Fractions

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## Equivalent fractions

- Multiply or divide the top (**numerator**) and bottom (**denominator**) by the same number: 2/3 = 4/6 = 8/12.
- To **simplify**, divide both by their HCF: 12/18 = 2/3.
- **Mixed numbers** and **improper fractions**: 2 3/4 = 11/4 (2 × 4 + 3 = 11), and 17/5 = 3 2/5.
- To order fractions, give them a **common denominator** or change them to decimals.

## Adding and subtracting

- Use a **common denominator**: 1/3 + 1/4 = 4/12 + 3/12 = 7/12.
- 5/6 – 1/3 = 5/6 – 2/6 = 3/6 = 1/2.

## Multiplying and dividing

- Multiply the **numerators** and multiply the **denominators**: 2/3 × 3/5 = 6/15 = 2/5.
- To divide, flip the second fraction and multiply: 2/3 ÷ 4/5 = 2/3 × 5/4 = 10/12 = 5/6.
- Change **mixed numbers** into **improper fractions** first.

## Fractions of amounts

- Divide by the **denominator**, then multiply by the **numerator**: 3/5 of 40 = 40 ÷ 5 × 3 = 24.
- To write one number as a fraction of another, put it over the total and **simplify**: 15 out of 60 = 15/60 = 1/4.

## Key terms

| | |
|---|---|
| **Numerator** | The top number of a fraction. |
| **Denominator** | The bottom number of a fraction. |
| **Equivalent fractions** | Fractions that have the same value, such as 1/2 and 2/4. |
| **Simplify** | Divide the numerator and denominator by a common factor. |
| **Improper fraction** | A fraction whose numerator is bigger than its denominator, such as 7/4. |
| **Mixed number** | A whole number and a fraction, such as 1 3/4. |
| **Common denominator** | A denominator shared by two or more fractions. |
| **Reciprocal** | A fraction turned upside down: the reciprocal of 4/5 is 5/4. |

## Quick questions

Cover the answers and test yourself: remembering is what makes it stick.

1. What is 12/18 in its simplest form?
2. What is 1/3 + 1/4?
3. What is 2/3 × 3/5?
4. What is 2/3 ÷ 4/5?
5. What is 3/5 of 40?
6. What is 2 3/4 as an improper fraction?
7. Which fraction is equivalent to 3/4?
8. What is 5/6 – 1/3?

### Answers

1. 2/3
2. 7/12
3. 2/5
4. 5/6
5. 24
6. 11/4
7. 9/12
8. 1/2

## What to do next

**Practise 12 questions on this topic**

**Try 4 exam questions, with mark schemes**

**Read the lesson, one step at a time**

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