Your notes

GCSE Maths: revision notes

# Place value and ordering numbers

## Contents

1. Place value
2. Ordering numbers
3. Multiplying and dividing by powers of 10
4. Inequality symbols
5. Using a known fact
6. Key terms
7. Quick questions
8. What to do next

## Place value

- The value of a **digit** depends on its position: millions, hundred thousands, ten thousands, thousands, hundreds, tens, units, then **tenths**, **hundredths** and thousandths after the decimal point.
- In 4.073, the 7 is worth 7 **hundredths** (0.07) and the 3 is worth 3 thousandths (0.003).
- Zeros are **placeholders**: 406 012 is four hundred and six thousand and twelve.

## Ordering numbers

- For whole numbers, the one with more **digits** is bigger (for positive numbers).
- For decimals, compare **digits** from the left. It helps to write them with the same number of decimal places: 0.5 = 0.50, which is bigger than 0.45.
- A longer decimal is not always bigger: 0.405 is less than 0.5.

## Multiplying and dividing by powers of 10

- Multiplying by 10, 100 or 1000 moves the **digits** 1, 2 or 3 places to the left: 3.6 × 100 = 360.
- Dividing by 10, 100 or 1000 moves the **digits** 1, 2 or 3 places to the right: 45 ÷ 1000 = 0.045.

## Inequality symbols

- < means 'is less than' and > means 'is greater than': 0.7 > 0.65.
- ≤ means 'is less than or equal to' and ≥ means 'is greater than or equal to'.
- The symbol always points to the smaller number.

## Using a known fact

- If you know 23 × 47 = 1081, then 2.3 × 4.7 = 10.81, because each number has been divided by 10, so the answer is divided by 100.
- Check the size of the answer with an estimate: 2 × 5 = 10.

## Key terms

| | |
|---|---|
| **Place value** | The value of a digit because of its position in a number. |
| **Digit** | One of the symbols 0 to 9 used to write numbers. |
| **Placeholder** | A zero used to keep the other digits in the right place. |
| **Decimal point** | The dot separating whole numbers from parts of a whole. |
| **Tenth** | One part in ten: 0.1. |
| **Hundredth** | One part in a hundred: 0.01. |
| **Inequality** | A statement that one value is greater or less than another. |

## Quick questions

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

1. What is the value of the 7 in 4.073?
2. Which number is the largest?
3. What is 3.6 × 100?
4. What is 45 ÷ 1000?
5. What is the value of the 5 in 352 816?
6. Which statement about 0.7 and 0.65 is true?
7. Which number is the smallest?
8. What is 0.06 × 1000?

### Answers

1. 7 hundredths
2. 0.5
3. 360
4. 0.045
5. 50 000
6. 0.7 is greater than 0.65
7. 1.019
8. 60

## What to do next

**Practise 12 questions on this topic**

**Try 6 exam questions, with mark schemes**

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

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