# UCAT quantitative reasoning: a free mini quiz

Ten questions in the style of the UCAT's quantitative reasoning section: percentages from a table, a fuel cost in another currency, and one table with four questions. Each answer gives the working and the slip behind every wrong option.

## How to sit it

Ten questions, in three groups. Have paper and a basic calculator ready, note the time when you start, and choose an answer for every question before you open any of the answers. Then open each answer, count your score and read the working for every question you missed.

None of your answers are sent: this page has no form, its only script moves the row of logos, and your answers stay on your paper.

## Percentage change from a table

### Question 1

Two clinics, North and South, recorded the number of patients they treated each year.

| Clinic | 2023 | 2024 | 2025 |
|---|---|---|---|
| **North** | 1900 | 1600 | 2100 |
| **South** | 2700 | 2400 | 2500 |

By what percentage did the number of patients treated at North increase from 2024 to 2025? Give your answer to one decimal place.

- A. 4.2%
- B. 10.5%
- C. 20.8%
- D. 23.8%
- E. 31.3%

**Answer**

**E.** 31.3%

North treated 1600 patients in 2024 and 2100 in 2025, so the increase is 2100 - 1600 = 500.

A percentage increase is taken of the starting value, the 2024 figure: 100 × 500 ÷ 1600 = 31.3%.

Where the other options come from:

- **A. 4.2%**: read the wrong row.
- **B. 10.5%**: started from the wrong year.
- **C. 20.8%**: divided by the wrong row's figure.
- **D. 23.8%**: percentage of the new value.

## Question 2

Patient numbers at two clinics over three years were as follows.

| Clinic | 2023 | 2024 | 2025 |
|---|---|---|---|
| **North** | 2600 | 1500 | 3150 |
| **South** | 1700 | 1400 | 2500 |

What was the percentage increase in patients treated at North between 2024 and 2025, to one decimal place?

- A. 21.2%
- B. 52.4%
- C. 78.6%
- D. 110.0%
- E. 117.9%

**Answer**

**D.** 110.0%

North treated 1500 patients in 2024 and 3150 in 2025, so the increase is 3150 - 1500 = 1650.

A percentage increase is taken of the starting value, the 2024 figure: 100 × 1650 ÷ 1500 = 110.0%.

Where the other options come from:

- **A. 21.2%**: started from the wrong year.
- **B. 52.4%**: percentage of the new value.
- **C. 78.6%**: read the wrong row.
- **E. 117.9%**: divided by the wrong row's figure.

## Question 3

Two clinics, North and South, recorded the number of patients they treated each year.

| Clinic | 2023 | 2024 | 2025 |
|---|---|---|---|
| **North** | 1900 | 2000 | 2100 |
| **South** | 1700 | 1500 | 3000 |

By what percentage did the number of patients treated at North increase from 2024 to 2025? Give your answer to one decimal place.

- A. 4.8%
- B. 5.0%
- C. 6.7%
- D. 10.5%
- E. 100.0%

**Answer**

**B.** 5.0%

North treated 2000 patients in 2024 and 2100 in 2025, so the increase is 2100 - 2000 = 100.

A percentage increase is taken of the starting value, the 2024 figure: 100 × 100 ÷ 2000 = 5.0%.

Where the other options come from:

- **A. 4.8%**: percentage of the new value.
- **C. 6.7%**: divided by the wrong row's figure.
- **D. 10.5%**: started from the wrong year.
- **E. 100.0%**: read the wrong row.

## Question 4

Patient numbers at two clinics over three years were as follows.

| Clinic | 2023 | 2024 | 2025 |
|---|---|---|---|
| North | 1750 | 1800 | 2900 |
| South | 2700 | 1750 | 1800 |

What was the percentage increase in patients treated at North between 2024 and 2025, to one decimal place?

- A. 2.9%
- B. 37.9%
- C. 61.1%
- D. 62.9%
- E. 65.7%

**Answer**

**C.** 61.1%

North treated 1800 patients in 2024 and 2900 in 2025, so the increase is 2900 - 1800 = 1100.

A percentage increase is taken of the starting value, the 2024 figure: 100 × 1100 ÷ 1800 = 61.1%.

Where the other options come from:

- **A. 2.9%**: read the wrong row.
- **B. 37.9%**: percentage of the new value.
- **D. 62.9%**: divided by the wrong row's figure.
- **E. 65.7%**: started from the wrong year.

# Fuel, distance and an exchange rate

## Question 5

A delivery van drives from its depot to a customer 140 km away and back again by the same route. It uses 16 litres of fuel per 100 km, and fuel costs 1.55 euros per litre. The exchange rate is £1 = 1.18 euros. What is the cost of the fuel for the whole journey, in pounds?

- A. £22.99
- B. £29.42
- C. £58.85
- D. £69.44
- E. £81.94

**Answer**

**C.** £58.85

The trip is there and back: 2 × 140 km = 280 km.

Fuel used: 280 km × 16 litres ÷ 100 km = 44.8 litres.

Cost in euros: 44.8 litres × 1.55 euros per litre = 69.44 euros.

In pounds, divide by the euros one pound buys: 69.44 ÷ 1.18 = £58.85.

Where the other options come from:

- **A. £22.99**: read litres per 100 km as km per litre.
- **B. £29.42**: costed one way only.
- **D. £69.44**: left the cost in euros.
- **E. £81.94**: multiplied by the exchange rate.

## Question 6

A van makes a return trip to a town 120 km from its base. Its fuel use is 8 litres per 100 km and the fuel is priced at 1.85 euros per litre. One pound buys 1.16 euros. How much does the fuel for the return trip cost in pounds?

- A. £15.31
- B. £30.62
- C. £35.52
- D. £41.20
- E. £47.84

**Answer**

**B.** £30.62

The trip is there and back: 2 × 120 km = 240 km.

Fuel used: 240 km × 8 litres ÷ 100 km = 19.2 litres.

Cost in euros: 19.2 litres × 1.85 euros per litre = 35.52 euros.

In pounds, divide by the euros one pound buys: 35.52 ÷ 1.16 = £30.62.

Where the other options come from:

- **A. £15.31**: costed one way only.
- **C. £35.52**: left the cost in euros.
- **D. £41.20**: multiplied by the exchange rate.
- **E. £47.84**: read litres per 100 km as km per litre.

# One table, four questions

A shop sells three products. Its prices and sales for two months were as follows.

| Product | Price per item, in pounds | Items sold in January | Items sold in February |
|---|---|---|---|
| **Ash** | 3.25 | 120 | 175 |
| **Birch** | 5.25 | 90 | 150 |
| **Cedar** | 6.35 | 130 | 100 |

Questions 7 to 10 use this table.

## Question 7

What was the shop's total income from the three products in January?

- A. £862.50
- B. £1497.50
- C. £1688.00
- D. £1991.25
- E. £3679.25

**Answer**

**C.** £1688.00

January income is price times January items, for each product, added: 3.25 × 120 + 5.25 × 90 + 6.35 × 130 = 390.00 + 472.50 + 825.50 = £1688.00.

Where the other options come from:

- **A. £862.50**: left out a row.
- **B. £1497.50**: slipped to February on the last row.
- **D. £1991.25**: read the February column.
- **E. £3679.25**: added both months.

## Question 8

In February, the ratio of the income from Ash to the income from Cedar can be written as x : 1. What is x, to two decimal places?

- A. 0.47
- B. 0.51
- C. 0.72
- D. 0.90

- E. 1.75

**Answer**

**D.** 0.90

February income from Ash: 3.25 × 175 = £568.75.

February income from Cedar: 6.35 × 100 = £635.00.

x = 568.75 ÷ 635.00 = 0.90.

Where the other options come from:

- **A. 0.47**: used January.
- **B. 0.51**: compared prices only.
- **C. 0.72**: compared with the wrong product.
- **E. 1.75**: compared items, not income.

## Question 9

By what percentage did the shop's total income from the three products change from January to February? Give your answer to one decimal place.

- A. 15.2%
- B. 18.0%
- C. 25.0%
- D. 29.8%
- E. 45.8%

**Answer**

**B.** 18.0%

January income: 390.00 + 472.50 + 825.50 = £1688.00.

February income: 568.75 + 787.50 + 635.00 = £1991.25.

Change as a percentage of January: 100 × (1991.25 - 1688.00) ÷ 1688.00 = 18.0%.

Where the other options come from:

- **A. 15.2%**: percentage of the February value.
- **C. 25.0%**: change in items, not income.
- **D. 29.8%**: averaged the three percentage changes.
- **E. 45.8%**: used one product.

## Question 10

What was the mean price of an item sold in February, to the nearest penny?

- A. £4.69

- B. £4.81
- C. £4.95
- D. £4.96
- E. £5.86

**Answer**

**A.** £4.69

February income: 568.75 + 787.50 + 635.00 = £1991.25.

Items sold in February: 175 + 150 + 100 = 425.

Mean price of an item: 1991.25 ÷ 425 = £4.69, a mean weighted by how many of each were sold.

Where the other options come from:

- **B. £4.81**: used both months.
- **C. £4.95**: unweighted mean of the prices.
- **D. £4.96**: used January.
- **E. £5.86**: divided by the wrong month's items.

## Score yourself

Count one mark for each correct answer, out of 10, and note how many minutes the ten took.

For each question you missed, find your answer under "Where the other options come from": it names the step that went wrong, such as taking a percentage of the new value instead of the old one, or costing only one way of a return trip.

## Want more questions like these?

These ten are a first test of whether students want UCAT quantitative reasoning practice from us. We have not built more yet. If you would like more, tell us and we will write back when it is ready.

## How these questions are made

Every question here is our own, written for the style of the test's quantitative reasoning section; none comes from an official paper. Each wrong option is the result of a real slip, so the option you chose tells you which step to check. Each key was confirmed by an independent solver working from the question alone, and recomputed by this page's build from the numbers in the question.

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