

# Numerical Reasoning

## Question & Answers

## What are numerical reasoning tests?

Numerical reasoning tests demonstrate your ability to deal with numbers quickly and accurately. These tests contain questions that assess your knowledge of ratios, percentages, number sequences, data interpretation, financial analysis and currency conversion.

## Why do employers use numerical reasoning tests?

The employers who use numerical reasoning tests assess how comfortable you are with numbers, basic mathematical functions and analyzing data under a considerable time pressure. It comes as no surprise, that firms and organizations who test their candidates with numerical reasoning tests usually rely on large numbers and data.

**“With these tests, it’s possible to measure candidates’ potential performance at work.”**

So, if the company you are applying for offers professional services in deal advisory, tax consulting or data analysis you should be expecting an assiduous accuracy from them in measuring your skills.

## Instructions for use

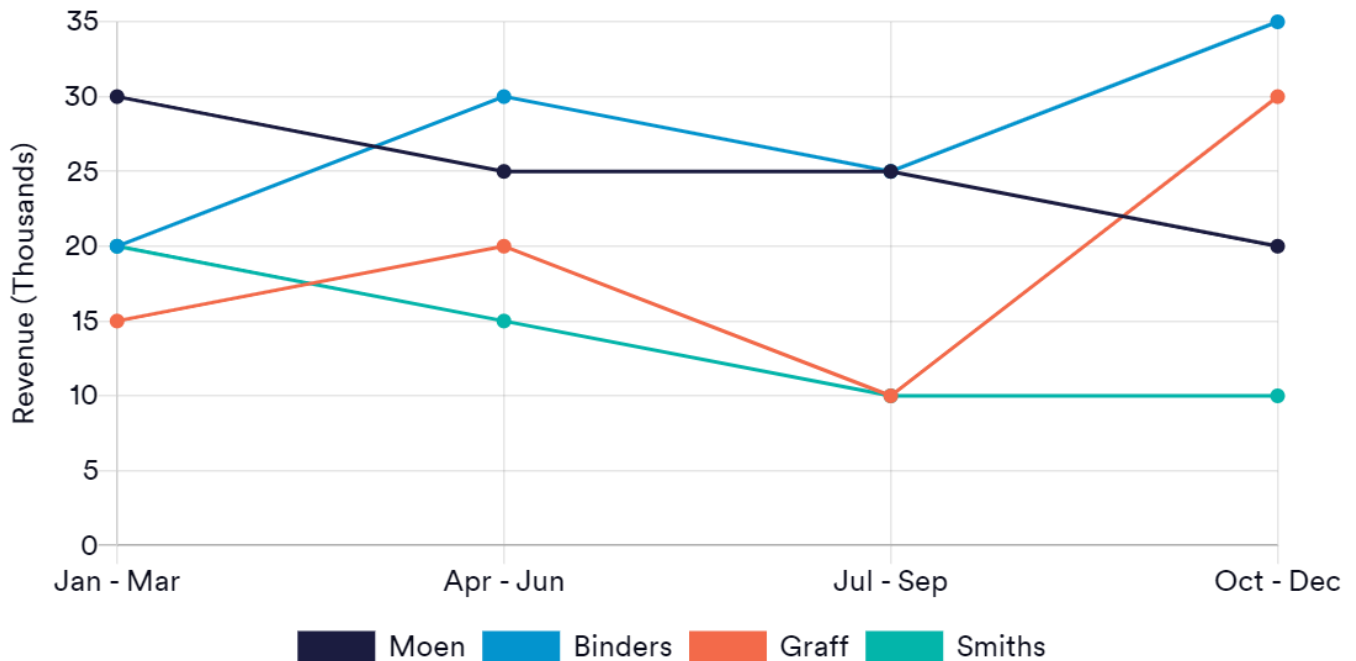
We’ve provided 5 numerical reasoning questions and answers for you to work through. Try and do each one under timed conditions without looking at the answers. Once you’ve completed each one, look at the answer to assess your performance and see how you can improve moving forwards.

All questions are multiple choice and there is only one correct answer. Calculators are permitted, we also recommend having a pen and paper ready for rough calculations. Try to take the test in an environment where you will not be disturbed.

If you’d like to try more numerical reasoning test practice, you can access our huge [numerical reasoning test](#) vault online. They’re all written by industry experts and are designed to replicate the real tests.

## Question 1 – Annual revenue in the retail industry

What was the percentage change in revenue for Graff from quarter 1 to quarter 4?



- A) 25%       B) 30%   
 C) 50%       D) 100%

## Solution

**Step 1:** Get Graff's revenue in the first quarter of the year: 15,000

**Step 2:** Get Graff's revenue in the fourth quarter of the year: 30,000

**Step 3:** Subtract the most recent quarter from the oldest:

$$30,000 - 15,000 = 15,000$$

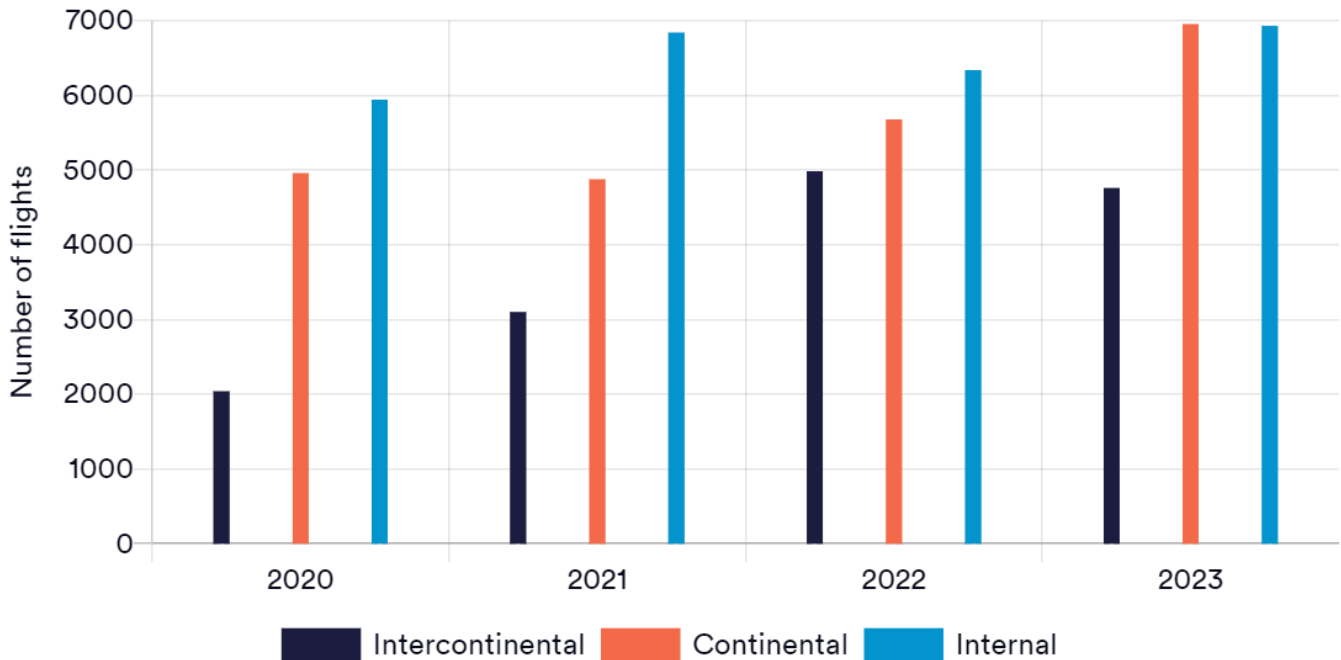
**Step 4:** Divide this by the first quarter figure, the 'oldest' figure.

$$15,000 / 15,000 \times 100 = 100\%$$

**Tip:** Quarters of a year will always be 3 months in length. Remember the first quarter won't always be Jan - Mar, a quarter could be any 3 consecutive months of the year. This is because companies have different year ends.

## Question 2 – Flights departing US airports

What is the difference in the number of continental flights compared to intercontinental flights over the three-year period from 2020 inclusive?



- A) 7,587       B) 5,393   
 C) 4,667       D) 3,611

## Solution

**Step 1:** Calculate the total number of continental flights:

$$4,958 + 4,876 + 5,678 = 15,512$$

**Step 2:** Calculate the total number of Intercontinental flights:

$$2,038 + 3,098 + 4,983 = 10,119$$

**Step 3:** Work out the difference:  $15,512 - 10,119 = 5,393$

**Tip:** Make sure you read the question carefully. In this case it specifically asks about a three year period from 2020, not all four years which you could easily assume.

### Question 3 – Drinks in primary and secondary school

What was the daily turnover for the drink vender in the Secondary School?

Drink	Price	Primary School	Secondary School
Juice	£1.50	21	45
Water	£0.80	12	115
Coca-Cola	£1.20	33	51
Sprite	£1.20	45	45
Milk	£1.40	9	12
Chocolate Milk	£1.90	30	32

A) £352.30

B) £247.05

C) £452.90

D) £345.50

### Solution

**Step 1:** This is a simple multiplication question. We start by calculating the turnover:

Turnover = number of people x price of drink

Juice:  $45 \times £1.50 = £67.50$

Water:  $115 \times £0.80 = £92$

Coca Cola:  $51 \times £1.20 = £61.20$

Sprite:  $45 \times £1.20 = £54$

Milk:  $12 \times £1.40 = £16.80$

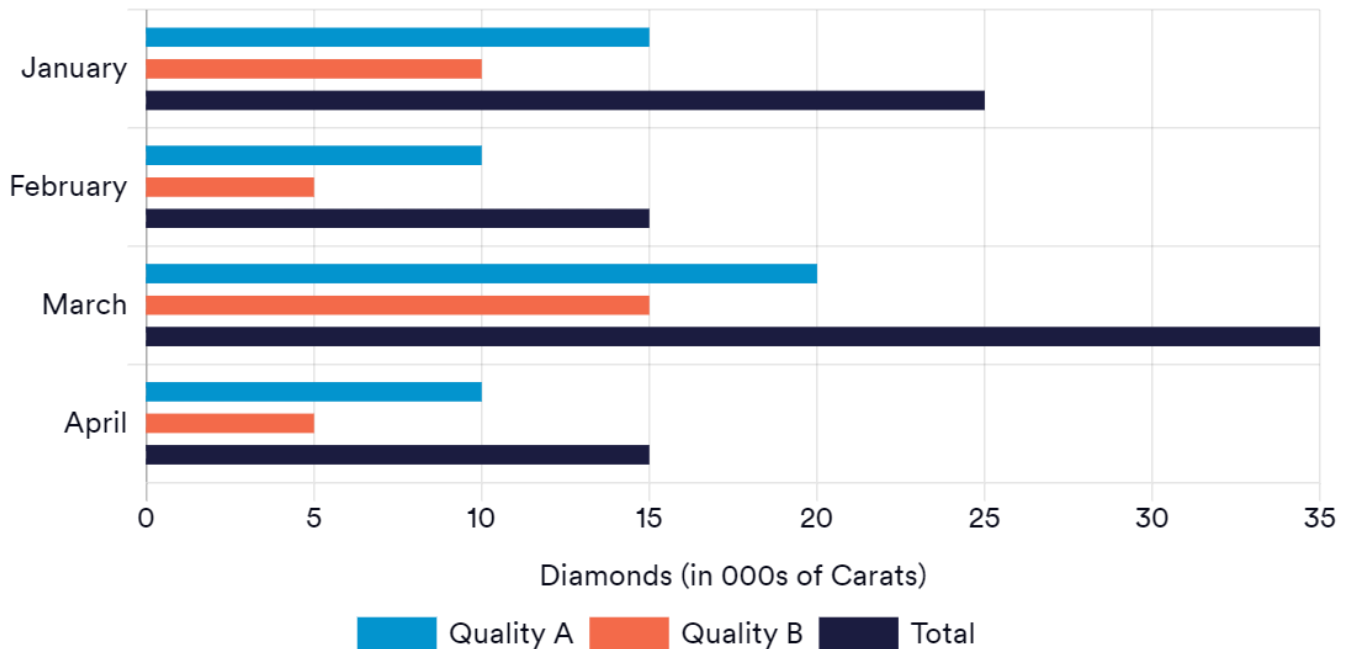
Chocolate Milk:  $32 \times £1.90 = £60.80$

**Step 2:** Calculate total turnover by adding these all together which equals £352.30.

**Tip:** This is not a complicated question but under time pressure, it is easy to get wrong so take your time and double-check your answers.

## Question 4 – Diamond production in South Africa

From April, the production of Quality A diamonds is expected to increase by 12% per month cumulatively. What is the predicted production figure for June in carats?



- A) 11,200 carats       B) 12,544 carats   
 C) 12,400 carats       D) 14,049 carats

## Solution

**Step 1:** April production = 10,000 carats

**Step 2:** To calculate May production, you need to increase by 12 %

May production =  $10,000 \times 1.12$  (12% increase) = 11,200 carats

**Step 3:** To calculate June production, you need to increase the May figure by 12%

June production =  $11,200 \times 1.12$  (12% increase) = 12,544 carats

**Tip:** When calculating cumulative percentage increase, do one calculation at a time.

## Question 5 – Income statement of Miles Technologies

If the company had wanted to increase its turnover by 45% from Year 1 to Year 3, by what percentage did it miss that target?

	Year 1 (\$000s)	Year 2 (\$000s)	Year 3 (\$000s)
Turnover	1,345	1,547	1,701
Cost of Sale	847	932	1,055
Gross Profit	498	615	647
Administrative Expenses	149	138	97
Distribution Costs	235	201	194
Net Profit	114	276	356
Tax (20%)	23	55	71
Profit after Tax	91	221	284

A) 12.8%

B) 14.8%

C) 13.8 %

D) 15.8%

## Solution

**Step 1:** Calculate the turnover in Year 3 would have been

$$1,345 \times 1.45 = 1,950.25$$

**Step 2:** Calculate the nominal difference between the forecast and the actual

$$1,950.25 - 1,701 = 249.25$$

**Step 3:** Convert the nominal difference into the percentage change

$$249.25 / 1950.25 \times 100 = 12.8\%$$

**Tip:** With multiple choice, you know that if your answer isn't there, you need to try again.

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