



QA Maths

Sample Test

with answers





QA Higher Education Diagnostic Maths Test

Date Test Sat _____

Applicant Name _____

A-Number _____

QAHE Invigilator _____

Location _____

Results (Pass/Fail) _____

Instructions

This test consists of 15 multiple choice questions.

Please answer all of the questions.

You are permitted to use a calculator during the test.

Mobile phones and other electronic devices must not be used during the test.

You are allowed up to 30 minutes to complete the test.

Each question is worth two marks.

Marks are not deducted for wrong answers.

All papers must be returned to the tester at the end of the test.





Numeracy Ltd. is a company that makes calculators. Below is a table of the number of calculators produced over a four week period.

	WEEK 1	WEEK 2	WEEK 3	WEEK 4
MONDAY	241	243	246	241
TUESDAY	238	236	238	240
WEDNESDAY	243	240	241	243
THURSDAY	240	240	242	238
FRIDAY	241	240	244	238

1. What is the average number of calculators produced in week 1?

- A. 244
- B. 238
- C. 242
- D. 241





2. What is the range of calculators produced on a Monday?

- A. 2
- B. 3
- C. 4
- D. 5

3. In any one week to make a profit the factory must produce more than 1,200. In how many weeks did the factory make a profit?

- A. 1
- B. 2
- C. 3
- D. 4

4. If the cost of each calculator is £45 and they are sold for £60, what is the profit made on each calculator as a % of its cost (to the nearest whole number)?

- A. 33%
- B. 25%
- C. 30%
- D. 75%





5. Numeracy Ltd. are considering offering a 15% discount on the £60 price for any orders purchased on-line. How much would you save if you purchased two calculators on-line?

- A. £111
- B. £18
- C. £12
- D. £102

Brian works at the Numeracy Ltd. factory which is 8 kilometres from his home. He drives to and from work every day. He fills his car up with petrol on Monday morning. The petrol tank holds 40 litres. Brian's car does 16 kilometres per litre of petrol.

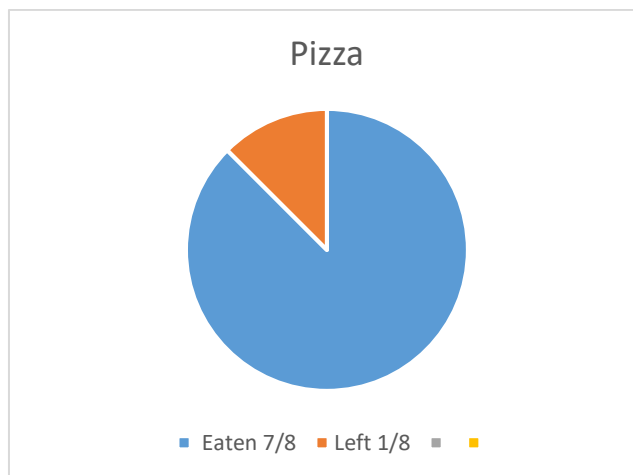
6. If Brian works Monday to Friday and only uses his car to travel to and from work, how much petrol will he have left in the tank when he arrives home on Friday evening?

- A. 37.5 litres
- B. 35 litres
- C. 30 litres
- D. 25 litres





7. Brian always has pizza for dinner on a Thursday. He always leaves a slice to take to work for his lunch on Friday.



Brian eats $\frac{7}{8}$ of the pizza and leaves $\frac{1}{8}$ for lunch. What % of the pizza did Brian leave?

- A. 25%
- B. 12.5%
- C. 30%
- D. 87.5%





8. Brian takes his wife and two children to the cinema. Look at the following price list:

Adult ticket	£9
Child ticket	£4.50
Family ticket (two adults and two children)	£25
Drinks	£3
Popcorn	£5
Ice-cream	£4

Brian buys the cheapest option for the tickets, four drinks, one popcorn and one ice-cream. What was the total cost of the trip?

- A. £40
- B. £37
- C. £46
- D. £39





9. Bill, Sue and Mary own a company with shares owned in the ratio of 1:2:3 respectively. Profits are shared out on the basis of the proportion of shares held by the owners. If the company makes a profit of £180,000, what is Sue's share of the profit?

- A. £30,000
- B. £60,000
- C. £72,000
- D. £90,000

10. Formulaic Limited has established a simple relationship between total cost and the number of units of product made:

$$y = 2,500 + 10.5x$$

Where y is total cost and x is the number of units made.

If the company made 1,300 units last month what was the total cost?

- A. £2,510.5
- B. £2,800
- C. £13,650
- D. £16,150





11. If the total cost of production for Formulaic Limited in February was £34,000, how many units were made?

- A. 3,476 units
- B. 3,238 units
- C. 3,000 units
- D. 3,500 units

12. The exchange rate is currently \$1 to £0.65. If you had £600, how many \$ would you get if you exchanged your money (to the nearest \$)?

- A. \$390
- B. \$923
- C. \$657
- D. \$405





13. If $y = 27x + 405$, what does x equal?

A. $x = (y - 27)/405$

B. $x = (y - 405)/27$

C. $x = y - 432$

D. $x = y/27 - 405$

14. One rectangle has sides of 2cm and 5cm. A second rectangle has sides of 4cm and 10cm. Express the areas of the two rectangles as a ratio:

A. 1:4

B. 1:2

C. 1:5

D. 1:3

15. Solve the expression $(T + 2) \times (14 + 3T)$

A. $20T + 3T^2 + 28$

B. $36T^2 + 28$

C. $14T + 3T^2 + 28$

D. $16 + 4T$





ANSWERS

1. D

2. D

3. B

4. A

5. B

6. B

7. B

8. C

9. B

10. D

11. C

12. B

13. B

14. A

15. A

