Fraudcorp – Moderate-level maths paper

Recommended time: 1 hour

This paper has some challenging moments, but in general is at a moderate standard. All these question types have been covered in previous 11 Plus Lifeline maths papers, making this a useful resource for revision.

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1. **(a)** What is $^{328}/_{400}$ as a percentage? **(2)**

Answer: .....

(b) What is 28% as a fraction in its simplest form? **(2)**

Answer: .....

(c) What is 80% of 1.8? **(2)**

Answer: .....

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2. If there are 35 towns in my area, with an average of 1640 houses in each one, and if each house has an average of 14 windows, how many house windows are there in my area's towns? **(2)**

Answer: …….

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3. Which of the following numbers is closest to 12.09? **(2)**

11.9 13 12.065 12.12 11.99 12.05 12.15 12.9

Answer: …….

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4. Write down the 5 prime numbers which multiply to make 3850. **(3)**

Answer: .....

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5. Ernest has made a four-sided spinner. He wants to find out whether it is fair.

He spins the spinner a number of times and writes the results in the following table. However, he forgets to complete three of the cells.

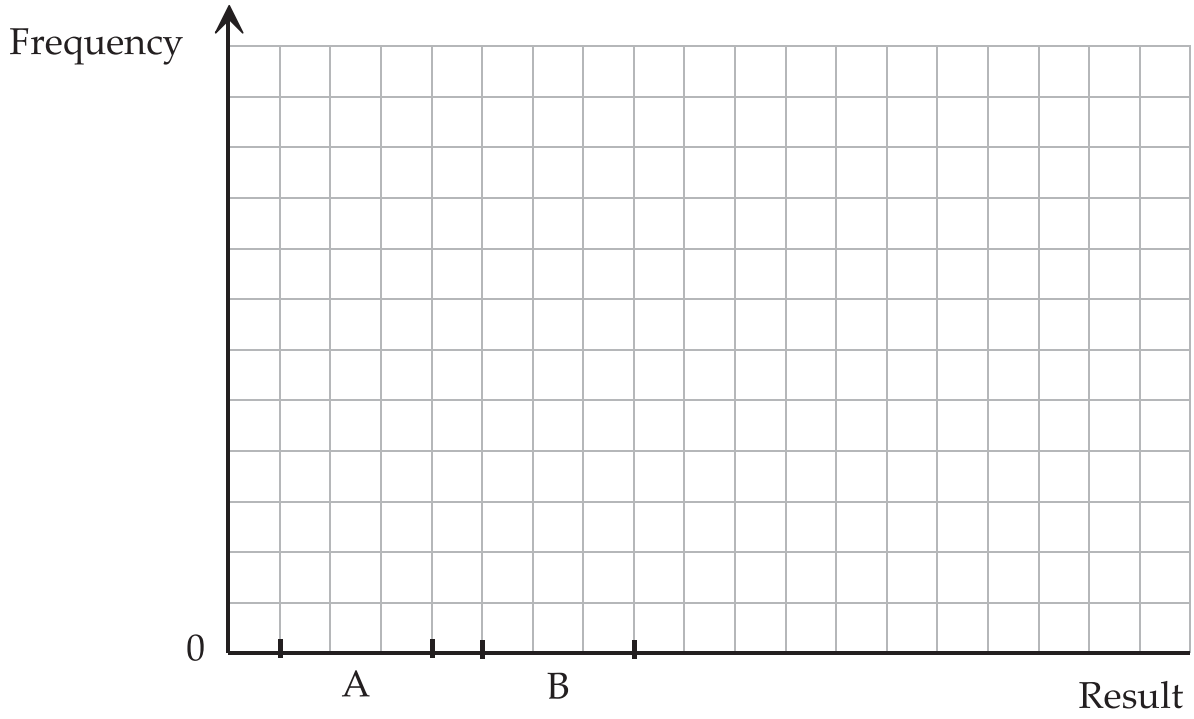
Result	Tally	Frequency
A	𝍸 |||	
B		6
C	𝍸 |||	8
D	𝍸 ||||	

(a) Complete the three empty cells in the table. **(3)**

(b) How many times did Ernest spin the spinner? **(1)**

Answer: .....

(c) Record Ernest's results on the following bar chart. **(4)**



(d) Do you think the spinner is fair? Explain your reasoning. **(3)**

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6. **(a)** $3 \div \square = 6$ **(1)**

(b) $3 \times \square \div 0.5 = 0$ **(1)**

(c) $5 + \square \div 7 = 25$ **(2)**

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7. Complete the following statements by placing one of $+$, $-$, $\times$ or $\div$ in each gap. You don't need to use all the symbols, and you can use some of them in more than one gap.

(a) $42 \quad \_\_\_\_ \quad 0.3 = 70 \quad \_\_\_\_ \quad 2$ **(2)**

(b) $60 \quad \_\_\_\_ \quad \frac{1}{5} = 2.4 \quad \_\_\_\_ \quad \frac{1}{5}$ **(2)**

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8. **(a)** How many different **four digit numbers** can be made by writing the following digits in different orders? **(2)**

5 4 3 1

Answer: .....

(b) How many different **three digit numbers** can be made by writing the following digits in different orders? **(3)**

2 4 4 1 1

Answer: .....

9. A typical meeting at Fraudcorp goes like this:

Cleaners arrive to prepare the room 40 minutes before the meeting is due to start. The first of the people due to attend the meeting comes in 25 minutes after this. People chat informally for a while and are served tea and coffee 5 minutes before the meeting is due to start. The tea cups are taken away at the end of the meeting. The period of informal chatting ends 10 minutes after the meeting's scheduled start time, which means that the meeting – which is scheduled to last 45 minutes – always overruns its planned finishing time by 10 minutes. There are a couple of people who hang around to chat for 5 minutes after the meeting ends.

How long is it from the time when the first of the meeting attendees arrives, until the last of them leaves? **(3)**

Answer: .....

10. **(a)** A train leaves Aberdeen at 11:42pm and arrives in Birmingham 7 hours and 42 minutes later.

At what time does the train reach Birmingham? **(2)**

Answer: .....

(b) I am driving from Paris to Ulaanbataar. I leave Paris at 7:10am on the 13th of January, Paris time, and I arrive in Ulaanbataar at 7:20pm on the 3rd of February, Ulaanbataar time.

Ulaanbataar is 7 hours ahead of Paris: when it's 8am in Paris, it's 3pm in Ulaanbataar.

How long does it take me to drive from Paris to Ulaanbataar (including any stops)? Give your answer in days, hours and minutes. **(3)**

Answer: .....

11. Solve the following equations.

(a) $5a + 18 = 8$ **(2)**

$\boldsymbol{a} =$ .....

(b) $\frac{3}{8}b - 1 = 5$ **(2)**

$\boldsymbol{b} =$ .....

(c) $\frac{7}{2}c + 3 = 2c + 4$ **(3)**

$\boldsymbol{c} =$ .....

12. It is the 12th of December. What was the date 200 days ago? **(3)**

Answer: .....

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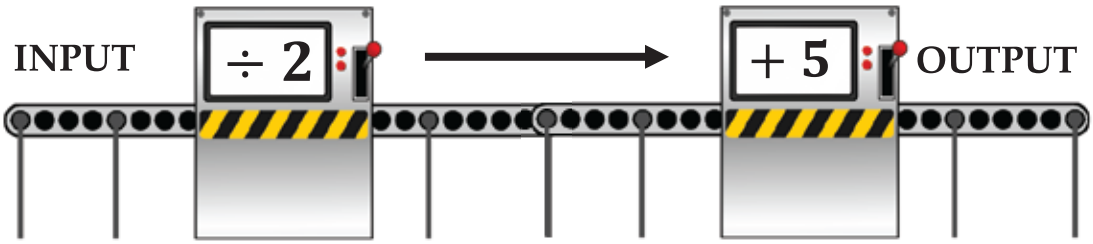
13. Hans's number machine turns an input number into an output number as follows:



(a) Complete the following table to show Hans's input and output values. **(2)**

Input	Output
−10	.....
5	.....
.....	33
.....	48.5

(b) Pieter's number machine gives the following results:

Input	Output
7	−16
8	−18
9	−20
10	−22

What is the rule for Pieter's number machine? **(3)**

Answer: …… then ……

(c) Tanya's number machine gives the following results:

Input	Output
3	13
5	19
8	28
12	40

What is the rule for Tanya's number machine? **(4)**

Answer: …… then ……

14. You are told that $23 \times 838 = 19274$.

Using this information, solve the following problems. **Include working** to demonstrate how you reach each result.

(a) 230×8.38 **(2)**

Answer: .....

(b) $\dfrac{192.74 \times 2}{2.3 \times 83.8}$ **(3)**

Answer: .....

15. Five swimmers took part in a race. They had to complete 30 lengths of a 50m pool.

The swimmers' times are shown in the following table.

Swimmer	Time	Position
Eric	15 mins 33 secs	
Cheng	14 mins 29 secs	
Francisco	14 mins 28 secs	
Themba	14 mins 50 secs	3rd
Nukilik	15 mins 10 secs	

(a) Complete the table to show the swimmers' positions, from 1st to 5th. **(2)**

(b) What was the time difference between the fastest and slowest swimmers? Give your answer in seconds. **(2)**

Answer: .....

(c) **(i)** What was the mean time taken for a swimmer to complete the race? Give your answer in minutes and seconds. **(3)**

Answer: .....

(ii) What was the median time taken for a swimmer to complete the race? Give your answer in seconds. **(2)**

Answer: .....

16. Give your answer to each of the following questions **as an algebraic expression**.

For example, if I have c coconuts, then another two fall into my sack, I will have $c + 2$ coconuts.

(a) Exam Papers Minus sell exam papers for d pounds each. Exam Paper Party sell exam papers for three times as much, plus three pounds. What is the cost in pounds of an exam paper from Exam Paper Party? **(2)**

Answer: .....

(b) Olga picks her nose n times each day. Oleg picks his nose 70% as often. How many times does Oleg pick his nose in a day? **(2)**

Answer: .....

(c) This week I drove m miles on my moped. Last week I drove 60% further. How many miles did I drive last week? **(2)**

Answer: .....

(d) Stephanie solves c crossword clues in ten minutes.
Mohan solves one and a half times as many clues.
Robert solves three fewer clues than Stephanie.
How many more clues does Mohan solve than Robert? **(4)**

Answer: .....

17. **(a) Three consecutive numbers** can be **added** together to make 72. What are they? **(2)**

Answer: .....

(b) A pattern begins with the numbers 1, 3, 5, 7.

Five numbers which appear consecutively in the same pattern can be **added** together to make 695. What is the **largest** of these five numbers? **(4)**

Answer: .....

(c) Two consecutive numbers can be **multiplied** together to make 3306. What are they? **(3)**

Answer: .....

(d) Three consecutive numbers can be **multiplied** together to make 1716. What is the **smallest** of these three numbers? **(3)**

Answer: .....

TOTAL 100 MARKS
