GCSE Foundation
Worked Solutions Paper 1c

LUCKY MATHS

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Solutions

Instructions

Use black ink or ball-point pen.
Draw diagrams in pencil.
Write your answers in the spaces provided and show all working.
The total mark for this paper is 40

Materials

Black pen
Pencil
Ruler
Scientific Calculator

Answer ALL questions.
Write your answers in the spaces provided.

You must write down all the stages in your working.

1 Write six thousand one hundred and forty-seven in figures.

6147

(Total for Question 1 is 1 mark)

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2 Simplify: m + m + m + m + m

5m

(Total for Question 2 is 1 mark)

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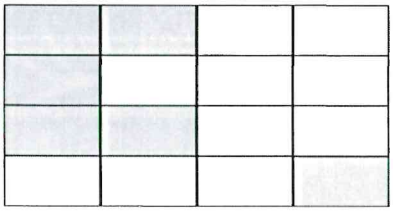
3 Here is a grid of squares.



What fraction of the grid is shaded?

$\frac{6}{16}$ or $\frac{3}{8}$

(Total for Question 3 is 1 mark)

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4 Write down a number that is less than –5.

-6, -7, -8 etc...

(Total for Question 4 is 1 mark)

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5 Change 7 kilograms into grams.

1kg = 1000g

7 x 1000 = 7000g

7000g

(Total for Question 5 is 1 mark)

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6 **Eloise's bakery is packing bags of flour.**
Each bag weighs **8kg.**
Eloise's bakery has already packed **210 bags**, and needs to pack a total of **3200 kg** of flour.
How many more bags does Eloise's bakery need to pack?

3200 ÷ 8 = 400 bags needed
Already have 210 bags packed
400 - 210 = 190

190

(Total for Question 6 is 3 marks)

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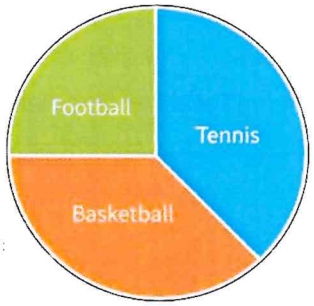
7 **320** students were asked what their favourite sport was.

Here is an accurately drawn pie chart.



(a) How many people chose football?

$\frac{1}{4} \times 320$

80

(1)

The number of students who chose **tennis** is the **same** as **basketball**.

(b) Work out how many people chose basketball.

Football = 80 students

320 - 80 = 240

240 ÷ 2 = 120

120

(2)

(c) Work out the size of this angle that represents basketball.

$\frac{120}{320} \times 360$

135°

(1)

(Total for Question 7 is 4 marks)

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8 Here are the first **four terms** of a number sequence:

56, 49, 42, 35

(a) Explain how to find the **next term** in the sequence.

subtract 7 from the previous term.

(1)

(b) Find the **difference** between 4th term and the 7th term of the sequence

4th Term = 35
5th Term = 35 - 7 = 28 6th Term = 28 - 7 = 21
7th Term = 21 - 7 = 14 Difference = 21 (35 - 14)

(2)

(c) Explain why -6 **can not** be a term in this sequence.

This sequence contains multiples of 7 and -6 is not a multiple of 7.

(1)

(Total for Question 8 is 4 marks)

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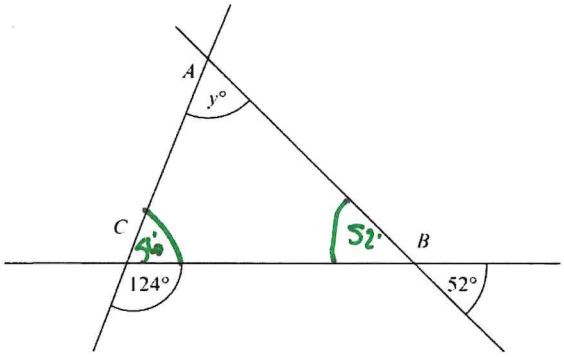
9 The diagram shows three straight lines.



Find the value of **y**.
You must give reasons for each stage of your answer

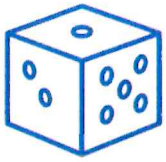
52° - Vertically opposite angles are equal
56° - Angles on a straight line sum to 180°

52 + 56 = 108
180 - 108 = 72° - Angles in a triangle sum to 180°

72°

(3)

(Total for Question 9 is 3 marks)



10 There are three friends.
Albert has £30
Brad has £54
Antonio has **four** times as much money as **Albert.**

These friends three then **share** out all of the money **equally**.

Work our how much money each of the three friends get.

Albert - €30
Brad - €54
Antonio - 4 x €30 = €120

30 + 54 + 120 = €204

$\frac{204}{3}$ = €68

€68 each

(Total for Question 10 is 3 marks)

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11 **25%** of a number is **80.**

(a) Work out **40%** of the same number.

80 x 4 = 320
0.40 x 320 = 128

128

(2)

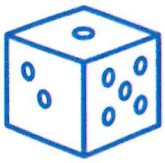
(b) **Increase** 480 by **18%**.

0.18 x 480 = 86.4
480 + 86.4

566.4

(2)

(Total for Question 11 is 4 marks)



12 **Five numbers have a mean of 12 and a mode of 15.**
Three of the numbers are 8, 12 and 15.
Find the other two numbers.

You must show all of your working.

$12 \times 5 = 60$

$8 + 12 + 15 = 35$

$60 - 35 = 25$

$$\frac{\text{Sum of the 5 numbers}}{5} = 12$$

The Mode is 15 which means that the most common number must be 15 and therefore one of the two missing numbers must be 15.

$15 + x = 25$

$-15 \quad -15$

$x = 10$

15 and 10

(3)

(Total for Question 12 is 3 marks)

13 Work out the value of

$$\sqrt{\frac{76 - 5.4}{28 + 6.3}}$$

(a) Write down all of the figures on your calculator display

1.434680814

(1)

(b) Write your answer to part (a) correct to 2 significant figures.

1.4|34680814

1.4

(2)

(Total for Question 13 is 3 marks)

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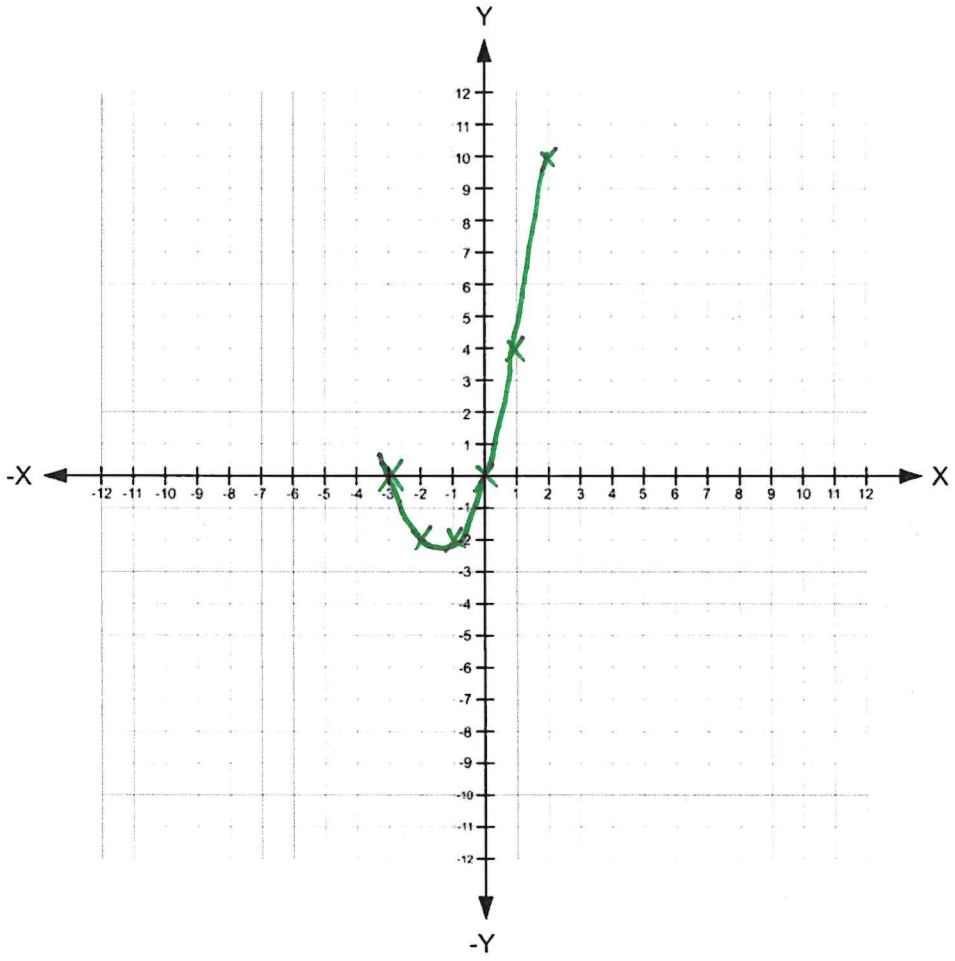
14 (a) Complete the table of values below for $y=x^2+3x$.

x	-3	-2	-1	0	1	2	3
y	0	-2	-2	0	4	10	18

(2)

(b) Plot the graph on the axis below.



(2)
(Total for Question 14 is 4 marks)

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15 **Two factories are producing juice bottles.**

- Factory P produces 45 bottles every 25 minutes.
- Factory Q produces 78 bottles every 40 minutes

On **Wednesday:**

- Factory P operates for 14 hours.
- Factory Q operates for 11 hours.

Work out the **total** number of juice bottles produced by **both** factories on **Wednesday**.

14 x 60 = 840 minutes

$\frac{840}{25} = 33.6$

33.6 x 45 = 1512 (Bottles from factory P)

11 x 60 = 660 minutes

$\frac{660}{40} = 16.5$

16.5 x 78 = 1287 (Bottles from factory Q)

1512 + 1287 = 2799

2799 Bottles

(4)

(Total for Question 15 is 4 marks)

TOTAL FOR PAPER IS 40 MARKS