GCSE Foundation
Worked Solutions Paper 1a

LUCKY MATHS

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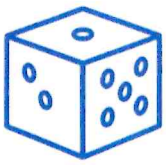
Solutions

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 Change 5 weeks into days.

5x7=35

35 days

(Total for Question 1 is 1 mark)

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2 Simplify 4 x 2y.

8y

(Total for Question 2 is 1 mark)

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3 Change 0.2 into a percentage.

0.2 x 100

20 %

(Total for Question 3 is 1 mark)

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4 Put the following decimals in ascending order:

0.205, 0.2, 0.27, 0.02

0.02, 0.2, 0.205, 0.27

(Total for Question 4 is 1 mark)

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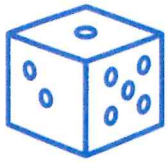
5 Write down a sensible metric unit that could be used to measure the length of a car.

Metres

(Total for Question 5 is 1 mark)



6 A prize fund of **£84** is shared between **four people**.
One person receives **£36**.
The other three people receive the **same amount**.

Work out how much **each** of the other three people receives.

84 - 36 = 48

48 ÷ 3 = 16

£ 16

(Total for Question 6 is 3 marks)

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7 Here is a rule for working out the total cost of hiring bicycles.
Cost = £24 × number of bicycles

(a) Work out the total cost of hiring **12 bicycles**.

24 × 12 = 288

€288

(2)

(b) A group hires some bicycles.
The total cost is **£312**.
Work out the number of bicycles hired.

312 ÷ 24 = 13

13 bicycles

(2)

(Total for Question 7 is 4 marks)

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8 Here are the numbers of **books read by 10 students** in one month.

7 14 6 6 8 5 6 10 11 14

(a) Find the **median**.

5, 6, 6, 6, 7, 8, 10, 11, 14, 14

7 + 8 = 15

15 ÷ 2 = 7.5

7.5

(2)

(b) Work out the **mean**.

7 + 14 + 6 + 6 + 8 + 5 + 6 + 10 + 11 + 14 = 87

87 ÷ 10 = 8.7

8.7

(2)

(Total for Question 8 is 4 marks)

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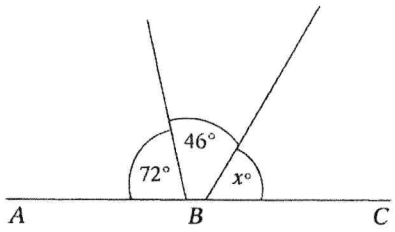
9 ABC is a straight line



(a) Work of the value of angle x

72 + 46 + x = 180

118 + x = 180

x = 180 − 118 = 62

x = 62

(2)

(b) Give a reason for your answer

.....

(1)

(Total for Question 9 is 3 marks)

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10 A school club has **120 students.**
They can choose one of these activities: **Football, Netball, or Swimming**.

40 students play football.
There are **65 girls in total**.
Of the **38 students** who **swim**, **21 are girls**.

Twice as many girls play netball than **boys**.

	Football	Netball	Swimming	Total
Boys	24	14	17	55
Girls	16	28	21	65
Total	40	42	38	120

Boys Total = 55
55 - 14 - 17 = 24
Boys football = 24

Girls Total = 65
65 - 28 - 21 = 16
Girls Football = 16.

Boys - Netball = x
Girls - Netball = 2x
x + 2x = 42
÷3 (3x = 42) ÷3
x = 14
NB - 14
NG - 28

(a) Complete the two way table

120 - 40 - 38 = 42
F - 40
S - 38
N - 42

(3)

(b) One of the students is chosen at random.
Work out the probability that this student is a **girl** who **swims**.

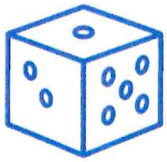
$\frac{21}{120} = \frac{7}{40}$

$\frac{7}{40}$

.....

(1)

(Total for Question 10 is 4 marks)



11 Maya drives her car for **95 minutes**.
She stops for a rest.
Maya then drives for a further **70 minutes.**

(a) Show that Maya drives for less than 3 hours in total.

95 + 70 = 165 minutes

3 hours = 3 x 60 = 180 minutes

165 minutes < 180 minutes

.....

(2)

A van travels for **3 hours** at a steady **speed of 55 mph**.

(b) Work out the distance the van travels.

D = S x T

Distance = 55 x 3 = 165

165 miles

(2)

(Total for Question 11 is 4 marks)

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12 A school needs a **new computer system**.
The cost of the computer system is **£7,200**.
A government grant will **pay 80%** of this cost.
The school will pay the **rest of the cost**.
Work out how much the school will pay.

80% of £7,200

0.8 x 7,200 = 5,760

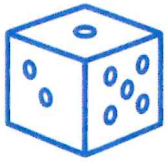
7,200 - 5,700 = 1,440

0.2 x 7,200 = 1,440

£1,440

(3)

(Total for Question 12 is 3 marks)



13 Aisha, Ben and Chloe share **£4,800** in the ratio **3 : 4 : 5**.
Work out how much money **each person receives**.

3+4+5 = 12 parts
4,800 ÷ 12 = 400

A - 3 x 400 = 1,200
B - 4 x 400 = 1,600
C - 5 x 400 = 2,000

Aisha: £ 1200

Ben: £ 1600

Chloe: £ 2000

(3)
(Total for Question 13 is 3 marks)

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14 Solve 2(2k+1)=9

2(2k+1)=9

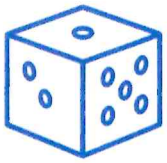
2 x 2k = 4k
2 x 1 = 2

4k + 2 = 9
- 2 - 2

÷4 (4k = 7) ÷4
k = 7/4

k= 7/4

(3)
(Total for Question 14 is 3 marks)



15 There are **30 marbles in a bag**.
There are:
10 red marbles
12 blue marbles
8 green marbles

Liam adds **10 more marbles** to the bag.
These marbles are **either red or blue**.
Liam is going to pick **one marble at random** from the bag.
The **probability** that this marble will be **blue is** $\frac{1}{2}$.
How **many more** red marbles did Liam **add** to the bag?
You must show all your working.

original - 30
New Marbles - 10
Total - 40

Original Blue - 12
Added Blue - $10 - x$
Total Blue - $12 + (10 - x) = 22 - x$

$$\frac{22 - x}{40} = \frac{1}{2}$$

$$22 - x = 20$$
$$-20 \quad -20$$
$$x = 2$$

2 red marbles

(4)

(Total for Question 15 is 4 marks)

TOTAL FOR PAPER IS 40 MARKS