GCSE Foundation
Worked Solutions Paper 2a

LUCKY MATHS

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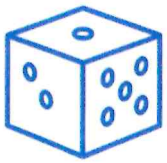
Solutions

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



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

You must write down all the stages in your working.

1 Write down the value of **6** in the number **3,462**.

60

(Total for Question 1 is 1 mark)

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2 Write **7.34** to **1 decimal place**.

7.3

(Total for Question 2 is 1 mark)

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3 Work out: 48.2 x 100

4820

(Total for Question 3 is 1 mark)

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4 Write the fraction $\frac{36}{90}$ in its **simplest form**.

$\frac{36}{90} = \frac{2}{5}$ (÷18)

$\frac{2}{5}$

(Total for Question 4 is 1 mark)

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5 Write **18%** as a decimal.

18÷100

0.18

(Total for Question 5 is 1 mark)

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6 A school records how many students attend an after school club during one week.

Day	Number of students
Monday	⌐——⌐ ⌐⌐
Tuesday	⌐——⌐ ⌐——⌐
Wednesday	⌐——⌐
Thursday	⌐——⌐ ⌐——⌐ ⌐⌐
Friday	⌐——⌐ ⌐⌐

Key

⌐——⌐ = 10 students

(a) Work out the **total number of students** who attended the club during this week.

10+5+10+10+10+10+10+5+10+5

85 students

(2)

(b) The following week, the number of students who attended on Friday was **three times** the number shown in the pictogram.

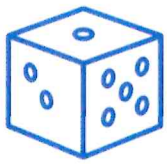
Work out **how many students** attended the club on **Friday** in the following week.

15x3=45

45

(1)

(Total for Question 6 is 3 marks)



7 **Vivek has five boxes of cereal.**
The total mass of the five boxes is **4 kilograms.**
Four of the boxes each have a mass of **720 grams.**
Work out the mass, in **grams,** of the remaining box.

5 boxes = 4kg

4kg = 4000g

4 x 720 = 2880 grams

4000 - 2880 = 1120 grams

1120 grams

(3)

(Total for Question 7 is 3 marks)

8 **Simplify:**

(a) 4m x 7n

$4 \times 7 = 28$

$m \times n = mn$

$28mn$

(1)

Simplify:

(b) 6p + 3q + 2p - q

$6p + 2p = 8p$

$3q - q = 2q$

$8p + 2q$

(2)

Expand and simplify:

(c) 4(2b + 3) + 2(b – 5)

$4(2b+3) + 2(b-5)$

$4 \times 2b = 8b$

$4 \times 3 = 12$

$2 \times b = 2b$

$2 \times -5 = -10$

$8b + 12 + 2b - 10$

$10b + 2$

(2)

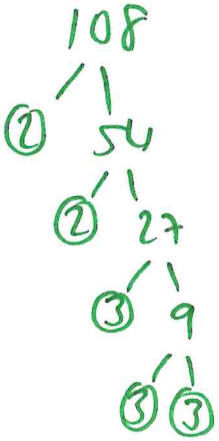
(Total for Question 8 is 5 marks)

9 Find the **Lowest Common Multiple** (LCM) of 108 and 120

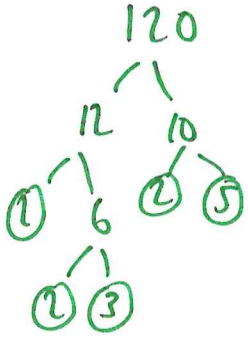
108, 216, 324, 432, 540, 648, 756, 864, 972, 1080, 1188, 1296

120, 240, 360, 480, 600, 720, 840, 960, 1080, 1200, 1320

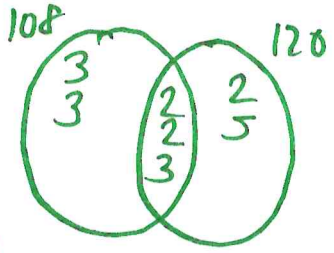
or



2x2x3x3x3



2x2x2x3x5



3x3x2x2x3x2x5 = 1080

1080

(Total for Question 9 is 3 marks)

10 **Daniel is shopping while on holiday abroad.**
He has **$200** to spend on clothes.

Daniel buys:

- 1 pair of trainers costing **$60**
- 3 T-Shirts costing **$25 each**

He would also like to buy a jacket costing **$80.**

Does Daniel have enough money left to buy the jacket?

You must **show all your working.**

1 Pair of trainers = $60

3 T-shirts = $25 x 3 = $75

$60 + $75 = $135

$200 - $135 = $65

The cost of the jacket is $80, so no, Daniel does not have enough money to buy the jacket.

No

(Total for Question 10 is 3 marks)

11 (a) Work out 54 x 28

	50	4
20	1000	80
8	400	32

1000
400
80
32
1512
1

1512

(2)

(b) Work out 315 ÷ 5

$$5\overline{)315} = 63$$

63

(2)

(Total for Question 11 is 4 marks)

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12 Work out $1\frac{3}{5} \times 2\frac{1}{4}$

Give your answer in its **simplest form**.

$1 \times 5 = 5 \quad 5+3 = \frac{8}{5}$

$2 \times 4 = 8 \quad 8+1 = \frac{9}{4}$

$\frac{8}{5} \times \frac{9}{4} = \frac{72}{20}$

$\frac{72 \div 4}{20 \div 4} = \frac{18}{5}$

$3\frac{3}{5}$

(3)

(Total for Question 12 is 3 marks)

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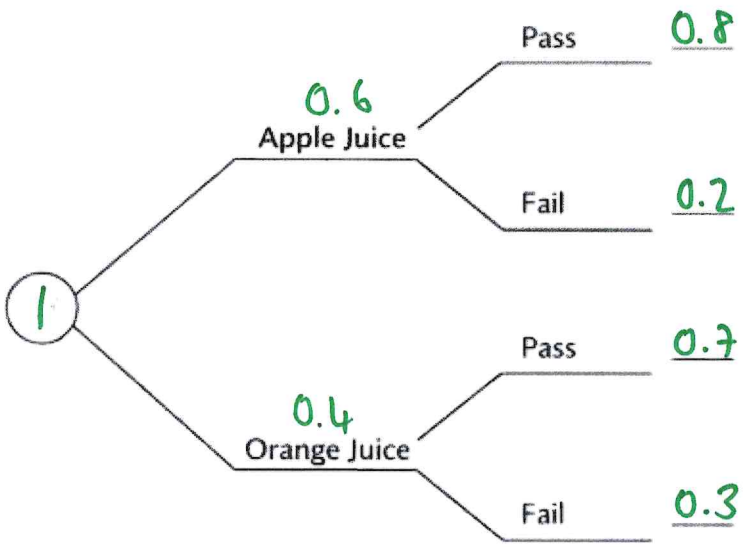
13 A machine fills bottles with either apple juice or orange juice.

- The probability that a bottle contains apple juice is **0.6**.

After filling, each bottle is checked.

- If the **bottle** contains **apple juice**, the probability that it **passes** the check is **0.8**.
- If the **bottle** contains **orange juice**, the probability that it **fails** the check is **0.3**.



(a) Complete the probability tree diagram showing all the **missing probabilities**.

See above

(2)

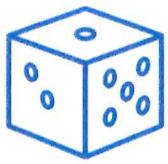
(b) Work out the probability that a bottle of **apple juice passes** the check.

P(apple juice - pass) = 0.6 × 0.8

0.48

(2)

(Total for Question 13 is 4 marks)



14 $y - 3 = 5$

Work out the value of $3y^2$.

$y - 3 = 5$
$+3 \quad +3$

$y = 8$

$y^2 = 8^2 = 64$
$3y^2 = 3 \times 64 = 192$

192

(Total for Question 14 is 3 marks)

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15 **A dance club has 80 members.**

- Half of the members are **adults.**
- The number of adults is **4 times** the number of teenagers.
- The remaining members are **children.**

The ratio of the number of **children** to the number of **teenagers** is n:1.

Work out the value of n.
You must **show all your working.**

Adults $= 4 \times$ Teenagers $\therefore T = 10$
Children $= 80 - 40 - 10 = 30$

C : T
n : 1

Children = 30
Teenagers = 10

$\frac{30}{10} = 3$

$n = 3$

(Total for Question 15 is 4 marks)

TOTAL FOR PAPER IS 40 MARKS