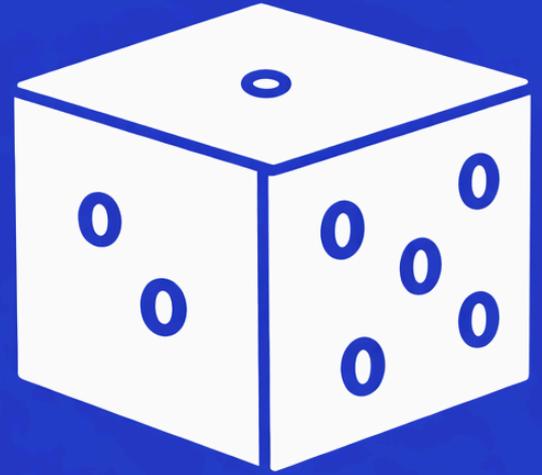


GCSE Foundation Worked Solutions 1b

LUCKY MATHS



More papers



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 80



Materials

Black pen

Pencil

Ruler

Scientific Calculator

Disclaimer:

The practice papers created by Lucky Maths are designed for revision and educational support only.

While every effort has been made to ensure accuracy and alignment with typical exam standards, these materials are not official exam papers and are not endorsed by any examination board.

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Students and parents should use these papers as supplementary practice alongside official resources.



Answer ALL questions.
Write your answers in the spaces provided.
You must write down all the stages in your working.

- 1 Write **0.07** as a **fraction** in its simplest form.

$$\frac{7}{100}$$

(Total for Question 1 is 1 mark)

- 2 Work out the value of 6^2

$$6 \times 6$$

$$36$$

(Total for Question 2 is 1 mark)

- 3 Simplify: $-2x - 6x$

$$-8x$$

(Total for Question 3 is 1 mark)

- 4 A square has sides of length **4 cm**.
What is the **perimeter** of the square?

$$4 + 4 + 4 + 4$$

$$16 \text{ cm}$$

(Total for Question 4 is 1 mark)

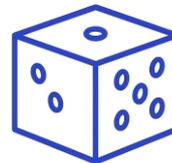
- 5 A bag contains **3 red** and **7 blue** counters.

Write the probability of picking a **red** counter.

$$3 + 7 = 10$$

$$\frac{3}{10}$$

(Total for Question 5 is 1 mark)



- 6 Write 56% as a decimal.

$$\frac{56}{100} = 0.56$$

.....
0.56

(2)

(Total for Question 6 is 2 marks)

- 7 Simplify the expression: $4a + 2b - a + 5b$

$$\textcircled{4}a + \underline{2b} - \textcircled{a} + \underline{5b}$$

.....
3a + 7b

(2)

(Total for Question 7 is 2 marks)

- 8 Share £90 in the ratio 2 : 3.

$$2 + 3 = 5$$

$$90 \div 5 = 18$$

$$\begin{array}{l} 18 \times 2 = 36 + \\ 18 \times 3 = 54 \\ \hline 90 \end{array} \checkmark$$

.....
£36 : £54

(2)

(Total for Question 8 is 2 marks)

- 9 Find the area of a rectangle with length 8 cm and width 5.3 cm.

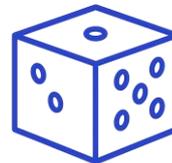
$$A = L \times W$$

$$8 \times 5.3 = 42.4$$

.....
42.4 cm²

(2)

(Total for Question 9 is 2 marks)



- 10 A spinner has 5 sections labelled A, B, C, D, and E.

The **probability** of landing on each section is **equal**.

What is the **probability** of **not** landing on C?

$$C = \frac{1}{5}$$

$$1 - \frac{1}{5} = \frac{4}{5}$$

$$\frac{4}{5}$$

(2)

(Total for Question 10 is 2 marks)

- 11 A recipe uses the ratio **flour : sugar : butter = 4 : 2 : 1**.

If you use **160 g of flour**, how much sugar and butter are needed?

$$160 \div 4 = 40g$$

$$\text{Sugar} - 2 \times 40 = 80g$$

$$\text{Butter} - 1 \times 40 = 40g$$

$$s = 80g, b = 40g$$

(3)

(Total for Question 11 is 3 marks)

- 12 The angles in a triangle are in the ratio **3 : 4 : 5**.

Find the size of **each** angle.

$$3 + 4 + 5 = 12$$

$$180 \div 12 = 15^\circ$$

$$3 \times 15 = 45$$

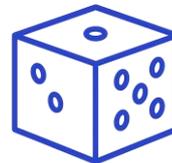
$$4 \times 15 = 60$$

$$5 \times 15 = 75$$

$$45^\circ, 60^\circ, 75^\circ$$

(2)

(Total for Question 12 is 2 marks)



13 Calculate the **mean** of the numbers: 0.5, 0.2, 5.7, 9.9, 10.22

$$0.5, 0.2, 5.7, 9.9, 10.22 = 26.52$$

$$26.52 \div 5 = 5.304$$

.....5.304.....

(2)

(Total for Question 13 is 2 marks)

14 (a) Write $\frac{12}{20}$ in its simplest form.

$$\frac{12}{20} = \frac{3}{5}$$

Handwritten annotations: a bracket above the 12 and 20 with $\div 4$ written above it, and a bracket below the 12 and 20 with $\div 4$ written below it.

..... $\frac{3}{5}$

(2)

(b) Increase your answer to part (a) by 25%.

$$\frac{3}{5} = 0.6$$

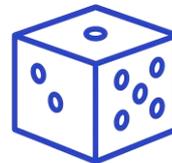
$$0.6 \times 0.25 = 0.15$$

$$0.6 + 0.15$$

.....0.75.....

(2)

(Total for Question 14 is 4 marks)



15 A price is **decreased** from £80 to £68.

(a) How much is the **decrease**?

$$80 - 68 = 12$$

..... £12

(1)

(b) Work out the percentage **decrease**.

$$\frac{12}{80} \times 100 = 0.15$$

$$0.15 \times 100 = 15\%$$

..... 15%

(3)

(Total for Question 15 is 4 marks)

16 (a) Work out:

$$-4 + 9$$

$$\begin{array}{l} ++ = + \quad +- = - \\ -- = - \quad -+ = - \end{array}$$

..... 5

(1)

(b) Work out:

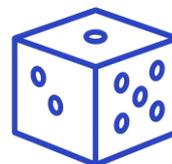
$$6 \times 7$$

$$6 \times 7 = 42$$

..... 42

(2)

(Total for Question 16 is 3 marks)



17 The mean of five numbers is 8.

Four of the numbers are: 5, 11, 7, and 10.

(a) Work out the **total** of all **five** numbers.

$$8 \times 5 = 40$$

.....40.....

(2)

(b) Find the **missing** number.

$$5 + 11 + 7 + 10 = 33$$

$$40 - 33 = 7$$

.....7.....

(3)

(Total for Question 17 is 5 marks)

18 A shop sells pencils in packs of 6.

Each pack costs **£1.80**.

Kimmi wants to buy enough pencils for a class of **28** students, giving **each student one pencil**.

How much will Kimmi need to spend?

Show your working.

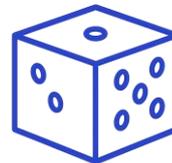
$$28 \div 6 = 4.66 = 5 \text{ packs}$$

$$5 \times 1.80 = 9.00$$

.....£9.00.....

(3)

(Total for Question 18 is 3 marks)



19 A group of **40 students** were asked about their favourite type of **music**.

Their answers are shown in the table:

Music Type	Number of Students
Pop	10
Rock	6
Rap	8
Classical	16

(a) Work out the size of the angle for **Pop**.

$$\frac{10}{40} \times 360$$

$$\dots\dots\dots 90^\circ$$

(1)

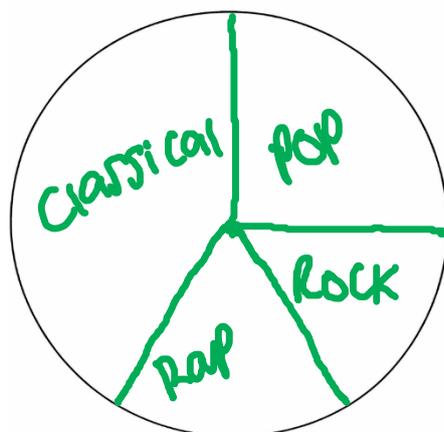
(b) Work out the size of the angle for **Classical**.

$$\frac{16}{40} \times 360$$

$$\dots\dots\dots 144^\circ$$

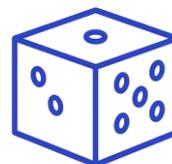
(1)

(c) Use your answers to help you **complete** the pie chart.



(2)

(Total for Question 19 is 4 marks)



- 20 A coach company charges a **fixed fee of £25** plus **£3.50 per passenger** for a school trip.

A teacher collects **£109** from the students.

How many **students** went on the trip?

Show all your working.

$$25 + 3.50x = 109$$

$$3.50x = 109 - 25$$

$$3.50x = 84$$

$$x = \frac{84}{3.50}$$

$$x = 24$$

(3)

(Total for Question 20 is 3 marks)

- 21 A ladder is leaning against a wall.

The bottom of the ladder is **1.8 metres** away from the wall.

The ladder reaches a point **4.2 metres** up the wall.

Work out the length of the ladder.

$$a^2 + b^2 = c^2$$

Give your answer to **1 decimal place**.

$$1.8^2 + 4.2^2$$

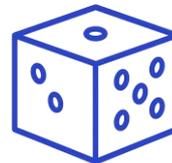
$$3.24 + 17.64 = 20.88$$

$$\sqrt{20.88} = 4.571$$

$$4.6 \text{ m}$$

(4)

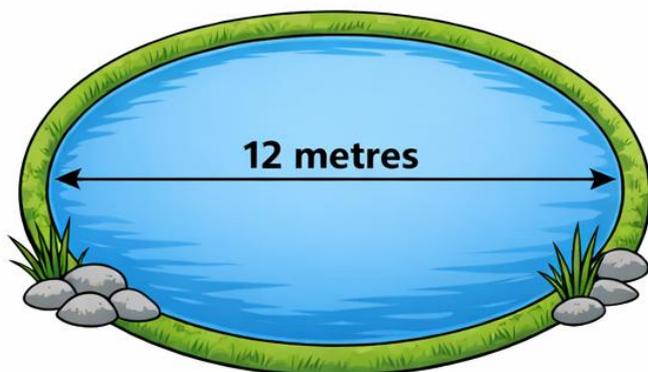
(Total for Question 21 is 4 marks)



22 A circular pond has a **diameter of 12 metres**.

Work out the area of the pond.

Give your answer to **2 significant figures**.



$$\text{Area} = \pi r^2$$

$$\pi \times 6^2 =$$

$$\pi \times 36 = 113.097$$

$$\dots\dots\dots 110\text{m}^2$$

(4)

(Total for Question 22 is 4 marks)

23 A bag contains six letter tiles.

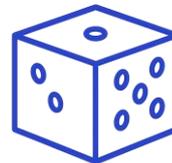
Each tile has one letter from the word **LEGEND**.

(a) Write down the probability of picking a tile with the letter E.

$$\frac{2}{6}$$

$$\dots\dots\dots \frac{2}{6} = \frac{1}{3}$$

(1)



(b) A tile is chosen at random.

↙ A E I O U

What is the probability that the tile **does not** show a vowel?

$$6 - 2 = 4$$

$$\frac{4}{6} = \frac{2}{3}$$

(2)

(Total for Question 23 is 3 marks)

24 Connor invests **£600** in a savings account.

The account pays **3% compound interest per year**.

Work out the total amount in the account after **4 years**.

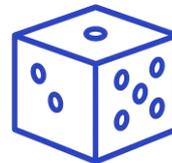
Give your answer to the **nearest penny**.

$$600 \times 1.03^4$$

$$\underline{\underline{£675.31}}$$

(4)

(Total for Question 24 is 4 marks)



25 A group of 4 friends go to a restaurant.

They order the following:

- 2 burgers at £7.50 each
- 1 pizza for £9.80
- 3 drinks at £2.40 each

The restaurant adds a **10% service charge** to the total bill.

How much do they pay altogether?

$$2 \times 7.50 = 15.00$$

$$9.80$$

$$3 \times 2.40 = 7.20$$

$$\underline{32.00}$$

$$0.10 \times 32 = 3.20$$

$$32.00 + 3.20 = 35.20$$

€35.20.....

(4)

(Total for Question 25 is 4 marks)

26 A baker is preparing boxes of cupcakes.

Each cupcake costs **£1.79**, and he needs to buy **47** of them.

Use **estimation** to work out an approximate cost for the cupcakes.

Show clearly how you estimate the numbers.

$$£1.79 \rightarrow £1.80$$

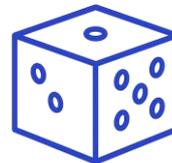
$$47 \rightarrow 50$$

$$1.80 \times 50 = 90$$

€90.....

(3)

(Total for Question 26 is 3 marks)



27 A sports club buys kits for its players.

They buy T-shirts, shorts, and socks in the ratio:

$$\text{T-shirts} : \text{Shorts} : \text{Socks} = 5 : 3 : 2$$

The club spends **£920** altogether.

- Each T-shirt costs **£12**
- Each pair of shorts costs **£8**
- Each pair of socks costs **£4**

Work out **how many** of each item the club buys.

Show all of your working.

$$5 \times 12 = 60$$

$$3 \times 8 = 24$$

$$2 \times 4 = 8$$

$$60 + 24 + 8 = 92$$

$$\frac{920}{92} = 10$$

$$\text{T-shirts} - 5 \times 10 = 50$$

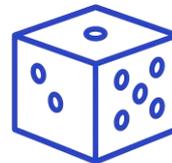
$$\text{Shorts} - 3 \times 10 = 30$$

$$\text{Socks} - 2 \times 10 = 20$$

50, 30 and 20

(5)

(Total for Question 27 is 5 marks)



28 A sequence is formed using this rule:

“Start at 7, then add the same number each time.”

Here are the first four terms of the sequence:

7, 12, 17, 22, ...
 $+5 +5 +5$

(a) Write down the **next two terms** in the sequence.

$$\begin{aligned} 22 + 5 &= 27 \\ 27 + 5 &= 32 \end{aligned}$$

27 and 32

(1)

(b) Work out the **nth term** of the sequence.

$$\begin{aligned} \textcircled{2}, 7, 12, 17, 22 \\ -5 \quad +5 \quad +5 \quad +5 \\ 5n + 2 \end{aligned}$$

$5n + 2$

(2)

(c) A term in the sequence is equal to **102**.

Work out the value of **n**.

Show your working.

$$\begin{aligned} 5n + 2 &= 102 \\ -2 \quad -2 \\ \div 5 \quad \left(\begin{array}{l} 5n = 100 \\ n = 20 \end{array} \right) \div 5 \end{aligned}$$

$n = 20$

(2)

(Total for Question 27 is 5 marks)

TOTAL FOR PAPER IS 80 MARKS