Name ANSWERS	Class

MATHS TEACHER HUB

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Four operations

(9 – 1) Topic booklet

Foundation

These questions have been collated from previous years GCSE Mathematics papers.

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser.	Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
  – *there may be more space than you need.*
- Diagrams are NOT accurately drawn, unless otherwise indicated.
- You must **show all your working out.**
- If the question is a **1F** question you are not allowed to use a calculator.
- If the question is a **2F** or a **3F** question, you may use a calculator to help you answer.

Information

- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

Answer ALL questions
Write your answers in the space provided.

2 Work out 120 – 89

$$\begin{array}{r} {}^{11}\not{1}\not{2}\not{0} \\ -\ 89 \\ \hline 31 \end{array}$$

31

November 2023 – Paper 1F

(Total for Question 2 is 1 mark)

2 Work out $\dfrac{30 + 12}{5 + 3}$

5.25

Specimen 1 – Paper 3F

(Total for Question 2 is 1 mark)

3 Work out 31.7×100

3170

November 2019 – Paper 1F

(Total for Question 3 is 1 mark)

4 Work out $-9 + 5$

-4

June 2023 – Paper 1F

(Total for Question 4 is 1 mark)

5 Find the number that is exactly halfway between 7 and 15

$\frac{7+15}{2} = \frac{22}{2} = 11$

11

June 2019 – Paper 1F

(Total for Question 5 is 1 mark)

5 Here are four digits.

7 3 4 9

(a) Use three of these digits to write down the largest possible 3-digit number.

974

(1)

(b) Here are four different digits.

8 2 1 6

Put one of these digits in each box to give the smallest possible answer to the sum.
You must use each digit only once.

16 + 28 = 44

or 18 + 26

(1)

May 2018 – Paper 3F

(Total for Question 5 is 2 marks)

5 Tanya needs to buy chocolate bars for all the children in Year 7
Each of the 130 children get one chocolate bar.

There are 8 chocolate bars in each packet.

Work out the least number of packets of chocolate bars that Tanya needs to buy.

$$8 \overline{)130.00} = 16.25$$

17

Sample 1 – Paper 1F

(Total for Question 5 is 3 marks)

6 Coffee is sold in jars.
There are 200 g of coffee in each jar.

Ben makes 8 cups of coffee each day.
He thinks he uses 2 g of coffee to make each cup of coffee.

Ben wants to buy enough coffee for 28 days.

(a) How many jars of coffee does Ben need to buy?

8 cups x 2g = 16g per day

16g x 28 days = 448g

He needs 3 jars

3

(3)

Ben finds that he uses 2.5 g of coffee to make each cup of coffee.

(b) How does this affect the number of jars of coffee he needs to buy?
You must give a reason for your answer.

8 cups x 2.5 = 20g per day

20g x 28 days = 560g

He still needs 3 jars.

(2)

(Total for Question 6 is 5 marks)

7 Miklos is swimming lengths of a swimming pool.
Each length of the pool is 25 m.

Miklos has swum 178 lengths of the pool.
He wants to swim a total distance of 8050 m.

Calculate how many more lengths Miklos needs to swim.

178 x 25m = 4450

8050 - 4450 = 3600

3600 ÷ 25 = 144

144

November 2024 – Paper 3F

(Total for Question 7 is 3 marks)

7 The table shows the total number of apples sold and the total number of oranges sold in a shop in each of three weeks.

	Week 1	Week 2	Week 3	
Number of apples	86	75	92	= 253
Number of oranges	68	80	76	= 224

In total for the three weeks, more apples than oranges were sold.
How many more?

253 - 224 = 29

29

June 2022 – Paper 3F

(Total for Question 7 is 3 marks)

7 £42 is shared equally between 3 friends.

How much does each friend get?

$$3\overline{)42} = 14$$

£ 14

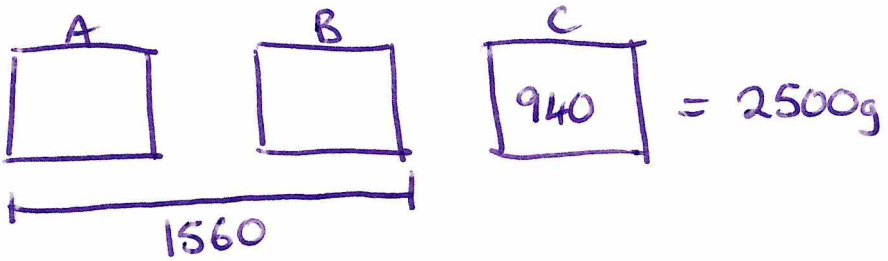
(Total for Question 7 is 2 marks)

7 A baker has three bags of flour, **A**, **B** and **C**.

Bag **A** and bag **B** contain the same amount of flour.
Bag **C** contains 940 g of flour.

In the three bags, there is a total of 2500 g of flour.

Work out the amount of flour in bag **A**.



$$2500 - 940 = 1560$$

$$1560 \div 2 = 780$$

780 g

(Total for Question 7 is 3 marks)

7 There are four types of counter in a bag.

The table shows the number of each type of counter in the bag.

Type of counter	red circle	green circle	red square	green square
Number of counters	16	26	11	7

There are more green counters than red counters.
How many more?

26 - 16 = 10

10

June 2019 – Paper 3F **(Total for Question 7 is 2 marks)**

8 Aisha was born in 1993

There was an election in the year of Aisha's 18th birthday.

There is an election every 5 years.

Will there be an election in 2030?
You must show how you get your answer.

1993 + 18 = 2011
2016 +5
2021 +5
2026 +5
2031 +5

No there wont be an election in 2030

June 2024 – Paper 3F **(Total for Question 8 is 3 marks)**

8 Four students play a game.
The table shows the number of points each student has.

Student	Ali	Barbara	Calliope	Danesh
Number of points	143	121	45	19

Barbara has more points than Danesh.

How many more?

121 − 19 = 102

102

(1)

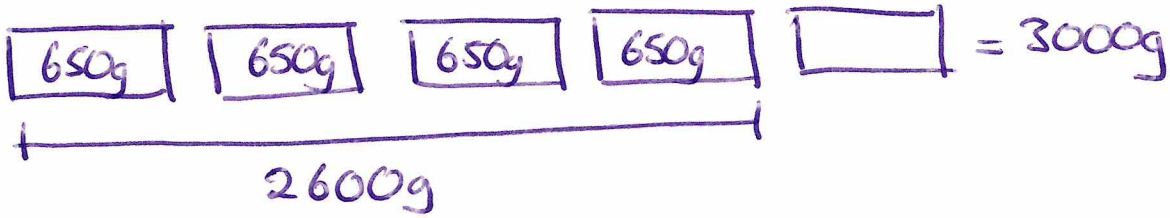
November 2022 – 3F

(Total for Question 8 is 1 mark)

8 Prasha has five blocks of wood.

The total weight of all five blocks of wood is 3 kilograms.
4 of the blocks of wood each have a weight of 650 grams.

Work out the weight, in grams, of the other block of wood.



400 grams

November 2019 – Paper 1F

(Total for Question 8 is 3 marks)

9 Jacqui wants to work out $3480 \div 5$

She knows that $3480 \div 10 = 348$

Jacqui writes $3480 \div 5 = 174$

because $10 \div 5 = 2$

and $348 \div 2 = 174$

What mistake did Jacqui make in her method?

Another way to ÷5 is to ÷10 then x2
She ÷10 then ÷2

November 2017 – Paper 1F **(Total for Question 9 is 1 mark)**

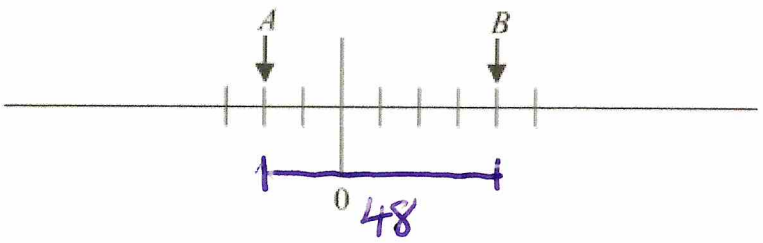
9 Work out 247×63

$$\begin{array}{r} 247 \\ \times\ 63 \\ \hline 741 \\ 1480 \\ \hline 15561 \\ {\scriptstyle 1\,1} \end{array}$$

15561

Specimen 1 – Paper 1F **(Total for Question 9 is 3 marks)**

9 The two numbers, A and B, are shown on a scale.



The difference between A and B is 48

Work out the value of A and the value of B.

$48 \div 6 = 8$

$A =$ -16

$B =$ 32

(Total for Question 9 is 3 marks)

11 Sinita wants to make 35 picture frames.
She needs 4 nails for each frame.

Sinita has 3 boxes of nails.
There are 48 nails in each box.

Has Sinita got enough nails to make all 35 frames?
Show how you get your answer.

35×4 nails $= 140$ nails

3 boxes $\times$ 48 nails $= 144$ nails

Yes she has enough nails for all 35 frames.

(Total for Question 11 is 3 marks)

11 Work out 74×58

$$\begin{array}{r} 74 \\ \times\ 58 \\ \hline 592 \\ 3700 \\ \hline 4292 \\ {\scriptstyle 1} \end{array}$$

4292

(Total for Question 11 is 2 marks)

11 The same number is missing from each box.

$\boxed{7} \times \boxed{7} \times \boxed{7} = 343$

(a) Find the missing number.

$\sqrt[3]{343} = 7$

7

(1)

(b) Work out 4^4

256

(1)

Specimen 1 – Paper 3F **(Total for Question 11 is 2 marks)**

12 Cornflakes are sold in two sizes of box.

Size of box	Weight of cornflakes
small	450 g
large	750 g

Rae buys 3 small boxes of cornflakes and some large boxes of cornflakes.
In total she buys 5850 g of cornflakes.

Work out the number of large boxes of cornflakes Rae buys.

3 small x 450g = 1350g

5850 - 1350 = 4500g

4500 ÷ 750 = 6

6

November 2019 – Paper 3F **(Total for Question 12 is 3 marks)**

13 A machine fills bags with sweets.

There are 4275 sweets.
There are 28 sweets in each full bag.

The machine fills as many bags as possible.

How many sweets are left?

$4275 \div 28 = 152.6785$

$152 \times 28 = 4256$

$4275 - 4256 = 19$

19

(Total for Question 13 is 3 marks)

13 A piece of wire is 240 cm long.

Peter cuts two 45 cm lengths off the wire.
He then cuts the rest of the wire into as many 40 cm lengths as possible.

Work out how many 40 cm lengths of wire Peter cuts.

$45 + 45 + 40 + 40 + 40 = 210$

3

May 2018 – Paper 1F **(Total for Question 13 is 3 marks)**

14 Work out 23×15

$$\begin{array}{r} 23 \\ \times\ 15 \\ \hline 115 \\ +\ 230 \\ \hline 345 \end{array}$$

345

November 2019 – Paper 1F **(Total for Question 14 is 2 marks)**

14 Work out 273×54

$$\begin{array}{r} 273 \\ \times\ 54 \\ \hline 1092 \\ +\ 13650 \\ \hline 14742 \end{array}$$

14742

(Total for Question 14 is 3 marks)

17 There are 84 calories in 100 g of banana.
There are 87 calories in 100 g of yogurt.

Priti has 60 g of banana and 150 g of yogurt for breakfast.

Work out the total number of calories in this breakfast.

Banana

84c = 100g

8·4c = 10g

50·4c = 60g

Yogurt

87c = 100g

43·5c = 50g

130·5c = 150g

50·4 + 130·5 = 180·9

180·9

June 2019 – Paper 2F **(Total for Question 17 is 4 marks)**

18 Work out 6.3×2.4

$$\begin{array}{r} 63 \\ \times\ 24 \\ \hline 252 \\ +\ 1260 \\ \hline 1512 \end{array}$$

15·12

November 2023 – Paper 1F **(Total for Question 18 is 3 marks)**

20 Work out $8.46 \div 0.15$

$$\frac{8.46}{0.15} = \frac{84.6}{1.5} = \frac{846}{15} = \frac{282}{5}$$

(×10, ×10, ÷3)

$$5\overline{)282.0}$$

56.4

56.4

(Total for Question 20 is 3 marks)

20 (a) Work out 3.67×4.2

$$\begin{array}{r} 367 \\ \times \quad 42 \\ \hline 734 \\ 14680 \\ \hline 15414 \end{array}$$

15.414

(3)

(b) Work out $59.84 \div 1.6$

$$\frac{59.84}{1.6} = \frac{598.4}{16} = \frac{299.2}{8}$$

×10 ÷2

$$8 \overline{)299.2} = 37.4$$

37.4

(3)

(Total for Question 20 is 6 marks)

21 Work out 6.34×5.2

$$\begin{array}{r} 634 \\ \times \quad 52 \\ \hline 1268 \\ 31700 \\ \hline 32968 \end{array}$$

32.968

Sample 1 – Paper 1F **(Total for Question 21 is 3 marks)**

22 Work out 0.004×0.32

$$\begin{array}{r} 32 \\ \times \quad 4 \\ \hline 128 \end{array}$$

0.00128

November 2022 – 1F **(Total for Question 22 is 2 marks)**

23 Work out 54.6×4.3

$$\begin{array}{r} 546 \\ \times \quad 43 \\ \hline 1638 \\ 21840 \\ \hline 23478 \\ {\scriptstyle 1} \end{array}$$

234.78

June 2017 – Paper 1F

(Total for Question 23 is 3 marks)