Name ANSWERS	Class

MATHS TEACHER HUB

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Factors and multiples

(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.
You must write down all the stages in your working.

1 Write down two factors of 18

1 x 18
2 x 9
3 x 6

1 , 18

November 2023 – Paper 2F **(Total for Question 1 is 1 mark)**

1 Write down two factors of 12

1 x 12
2 x 6
3 x 4

1 , 12

November 2019 – Paper 3F **(Total for Question 1 is 1 mark)**

2 Write down two factors of 35

1 x 35
5 x 7

1, 35

November 2021 – Paper 3F **(Total for Question 2 is 1 mark)**

2 Here is a list of numbers.

5 11 (18) 22 29

From the list, write down a multiple of 3

18

May 2020 – Paper 1F **(Total for Question 2 is 1 mark)**

2 Write down a multiple of 8 that is between 41 and 60

48 or 56

June 2019 – Paper 3F **(Total for Question 2 is 1 mark)**

2 Write down a multiple of 6 that is between 40 and 50

42 or 48

November 2017 – Paper 2F **(Total for Question 2 is 1 mark)**

2 Here is a list of six numbers.

1 3 6 9 12 24

Which number in the list is **not** a factor of 24?

1×24
2×12
3×8
4×6

9

Specimen 1 – Paper 2F **(Total for Question 2 is 1 mark)**

3 Write down two factors of 12

1×12
2×6
3×4

1 , 12

June 2022 – Paper 3F **(Total for Question 3 is 1 mark)**

3 Write down two factors of 15

1×15
3×5

1 , 15

June 2019 – Paper 2F **(Total for Question 3 is 1 mark)**

3 Write down an even number that is a multiple of 7

14, 28, 42, 56, 70, 84, ...

14

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

3 Here is a list of numbers.

3 5 7 12 15 18 20

From the list, write down a factor of 10

1×10
2×5

5

November 2018 – Paper 1F **(Total for Question 3 is 1 mark)**

3 Write down all the factors of 18

1×18, 2×9, 3×6,

November 2017 – Paper 3F **(Total for Question 3 is 2 marks)**

4 Write down the multiple of 7 that is between 30 and 40

35

May 2024 – Paper 2F **(Total for Question 4 is 1 mark)**

4 Write down a factor of 60 that is between 8 and 14

1×60
2×30
3×20
4×15
5×12
6×10

10 or 12

November 2022 – 1F **(Total for Question 4 is 1 mark)**

4 Write down a 3 digit number that is a multiple of 5

Any 3 digit number ending in a 0, or 5

145

June 2022 – Paper 2F **(Total for Question 4 is 1 mark)**

4 Here is a list of numbers.

7 8 15 16 18 22

Write down the number from the list that is a multiple of 6

18

November 2019 – Paper 3F **(Total for Question 4 is 1 mark)**

4 Here is a list of numbers.

1 2 5 6 12

From the list, write down

(i) a multiple of 4

12

(ii) a prime number

2 or 5

Specimen 1 – Paper 3F **(Total for Question 4 is 2 marks)**

4 Write down all the factors of 20

1×2, 2×10, 4×5,

Sample 1 – Paper 1F **(Total for Question 4 is 2 marks)**

5 Here is a list of numbers.

20 40 60 80 100

One of these numbers is a multiple of 25

Which number?

100

June 2023 – Paper 2F **(Total for Question 5 is 1 mark)**

5 Here is a list of numbers.

5 11 18 22 29

From the list, write down a multiple of 3

18

November 2022 – 3F **(Total for Question 5 is 1 mark)**

5 Write down the first even multiple of 7

14

May 2018 – Paper 1F **(Total for Question 5 is 1 mark)**

6 Here is a list of whole numbers from 21 to 30

21 22 23 24 25 26 27 28 29 30

(a) From the list, write down a square number.

25

(1)

(b) From the list, write down a multiple of 8

24

(1)

November 2021 – Paper 1F **(Total for Question 6 is 2 marks)**

6 Margaret is thinking of a number.
She says,

"My number is odd. It is a factor of 36 and a multiple of 3"

There are two possible numbers Margaret can be thinking of.

Write down these two numbers.

36
1 × 36
2 × 18
3 × 12
4 × 9
6 × 6

3 9

May 2018 – Paper 2F **(Total for Question 6 is 3 marks)**

6 Write down all the factors of 30

1×30, 2×15, 3×10, 5×6

May 2018 – Paper 3F

(Total for Question 6 is 2 marks)

6 Jan writes down

one multiple of 9
and two different factors of 40

Jan adds together her three numbers.
Her answer is greater than 20 but less than 30

Find three numbers that Jan could have written down.

40
1×40
2×20
4×10
5×8

__ + __ + __ = 20↦30

9,10,2
9,10,4
9,10,5,
9,10,8,
9,8,5
9,8,4

18,2,4
18,2,5
18,2,8
18,4,5

18,1,2,
18,1,4
18,1,5
18,1,8
18,1,10

Sample T – Paper 2F

(Total for Question 6 is 3 marks)

7 Write down **three** different factors of 20

1×20
2×10
4×5

1 , 2 , 4

June 2023 – Paper 1F

(Total for Question 7 is 2 marks)

7 Write down three different factors of 18 that add together to give a prime number.

18
1×18
2×9
3×6

$1+3+9 = 13$
$2+3+6 = 11$
$2+3+18 = 23$
$2+6+9 = 17$
$2+9+18 = 29$

Specimen 2 – Paper 3F

(Total for Question 7 is 2 marks)

8 Here is a list of numbers.

21 22 23 24 25 26 27 28 29

(a) From the numbers in the list, write down a square number.

25

(1)

(b) From the numbers in the list, write down a number that is a multiple of **both** 4 and 6

24

(1)

(c) Write down all the prime numbers in the list.

23, 29,

(1)

June 2017 – Paper 2F **(Total for Question 8 is 3 marks)**

11 Write down three different multiples of 4 that add up to 40

4 + 16 + 20

4 + 12 + 24

4 + 8 + 28

8 + 12 + 20

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

15 Bert has 100 cards.
There is a whole number from 1 to 100 on each card.
No cards have the same number.

Bert puts a star on every card that has a multiple of 3 on it.
He puts a circle on every card that has a multiple of 5 on it.

Work out how many cards have both a star and a circle on them.

Multiples of 3 and 5 = multiples of 15

15, 30, 45, 60, 75, 90,

6

November 2018 – Paper 3F **(Total for Question 15 is 3 marks)**

16 Find the Highest Common Factor (HCF) of 24 and 60

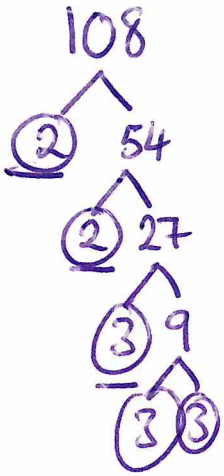
1 x 24
2 x 12
3 x 8
4 x 6

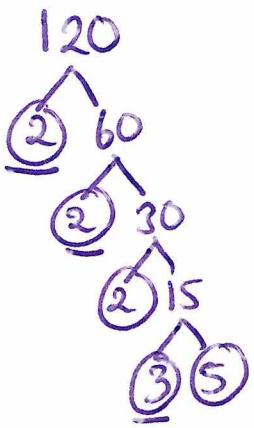
1 x 60
2 x 30
3 x 20
4 x 15
5 x 12
6 x 10

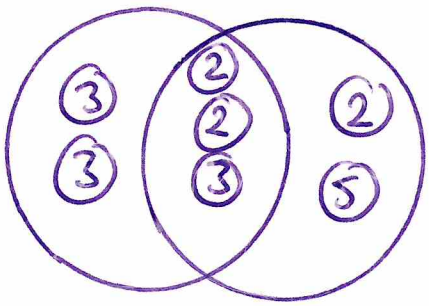
HCF = 12

Sample 1 – Paper 2F **(Total for Question 16 is 2 marks)**

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





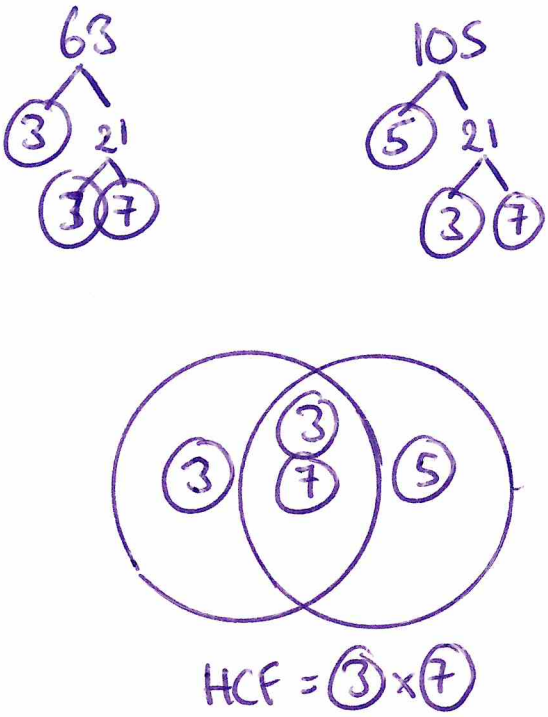


LCM = 3 × 3 × 2 × 2 × 3 × 2 × 5

LCM = 1080

(Total for Question 20 is 3 marks)

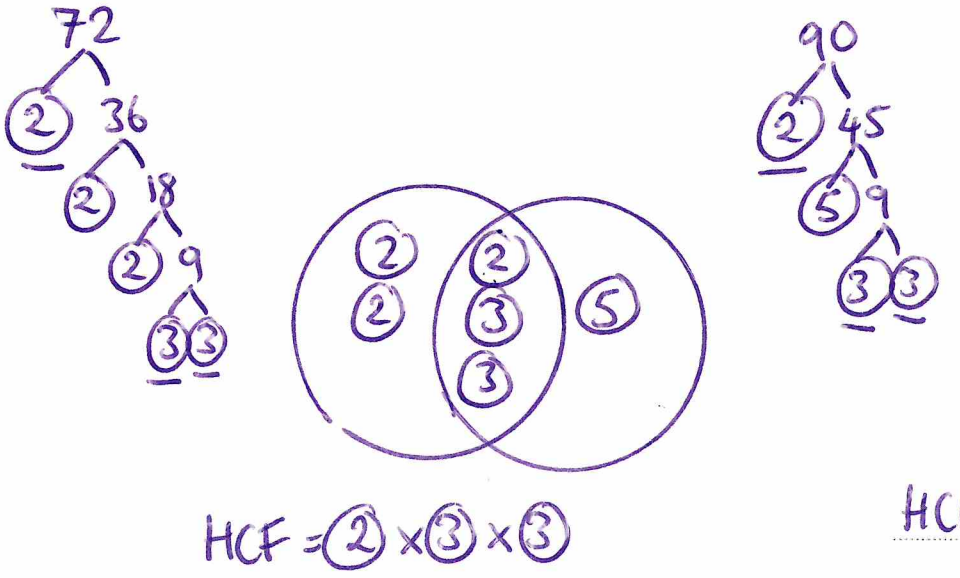
22 Find the highest common factor (HCF) of 63 and 105



HCF = 21

June 2024 – Paper 3F **(Total for Question 22 is 2 marks)**

24 Find the highest common factor (HCF) of 72 and 90



HCF = 18

June 2019 – Paper 1F **(Total for Question 24 is 2 marks)**