Chhetri Academy

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GCSE MATHS

Number

Edexcel 1MA1 | Subtopic collection Topic 02

Primes, factors, HCF and LCM

Foundation tier

Past paper question booklet

91	2010-2025	Foundation
question groups	available papers	tier

Before you begin

1. Show working and use units where appropriate.
2. Use extra paper if you need more space.
3. Print at actual size (100%) for measurement questions.

Name _____ **Date** _____

Whole questions are retained for context; some parts cover other points. Legacy sources are labelled.

6 Here is a list of eight numbers

4 5 25 29 30 33 39 40

From the list, write down

(i) a factor of 20

.....

(ii) a multiple of 10

.....

(iii) the prime number that is greater than 15

.....

(Total for Question 6 is 3 marks)

8 Here is a list of numbers.

2 3 10 12 15 16 24

From the list write down

(a) an odd number

.....

(1)

(b) a multiple of 6

.....

(1)

(c) a factor of 18

.....

(1)

(Total for Question 8 is 3 marks)

8 (a) Write down all the factors of 18

.....

(2)

Here is a list of numbers.

20 21 22 23 24 25 26 27 28 29

(b) From the list, write down all the multiples of 7

.....

(1)

(Total for Question 8 is 3 marks)

16 Michael writes down 4 different factors of 60

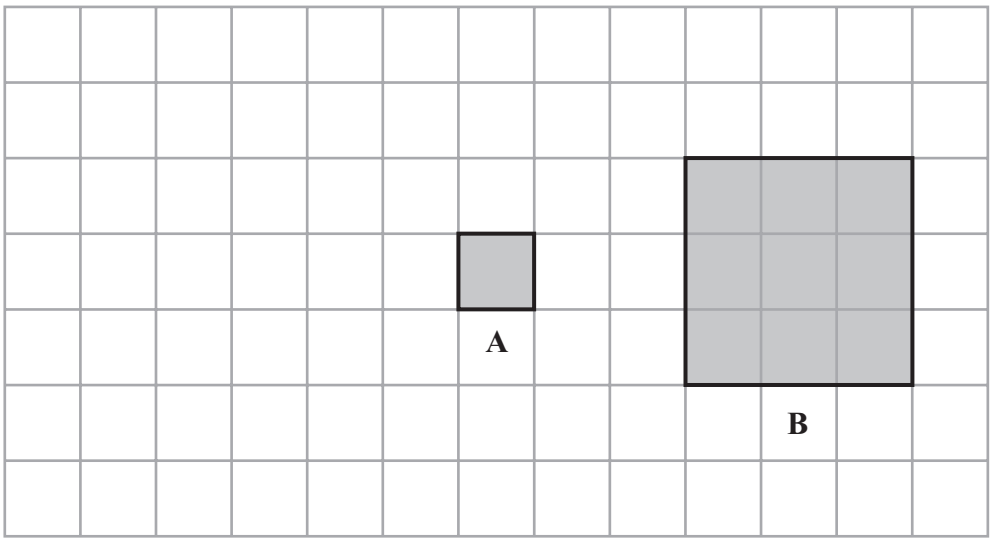
He adds the 4 factors together.
He gets a number greater than 20 but less than 35

What 4 factors could Michael have written down?

....

(Total for Question 16 is 3 marks)

10 Here are two squares.



Square **B** is an enlargement of square **A**.

(a) What is the scale factor of the enlargement?

.....

(1)

Square **A** is moved 4 squares to the left.

(b) On the grid, draw the new position of square **A**.

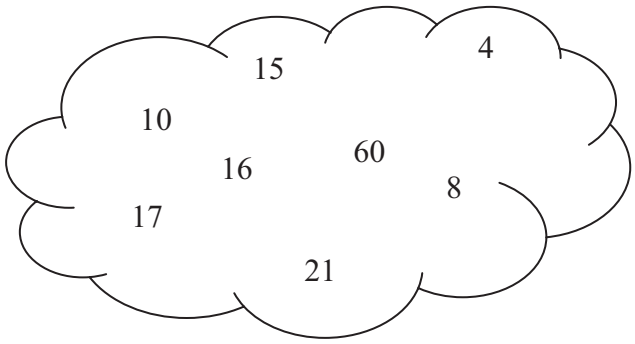
(1)

(c) In the space below, draw accurately a square with side of length 4 cm.

(2)

(Total for Question 10 is 4 marks)

3



From the numbers in the cloud,

(a) write down a square number,

.....

(1)

(b) write down a multiple of 7,

.....

(1)

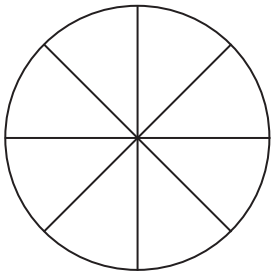
(c) write down a factor of 30

.....

(1)

(Total for Question 3 is 3 marks)

6 (a) Shade $\frac{3}{8}$ of this shape.



(1)

(b) Change 0.6 into a percentage.

.....%

(1)

(c) Work out $-3 + 7$

.....

(1)

(d) Work out $\frac{3}{8}$ of £40

£ .....

(2)

(e) Write down **one** prime number from the list of numbers below.

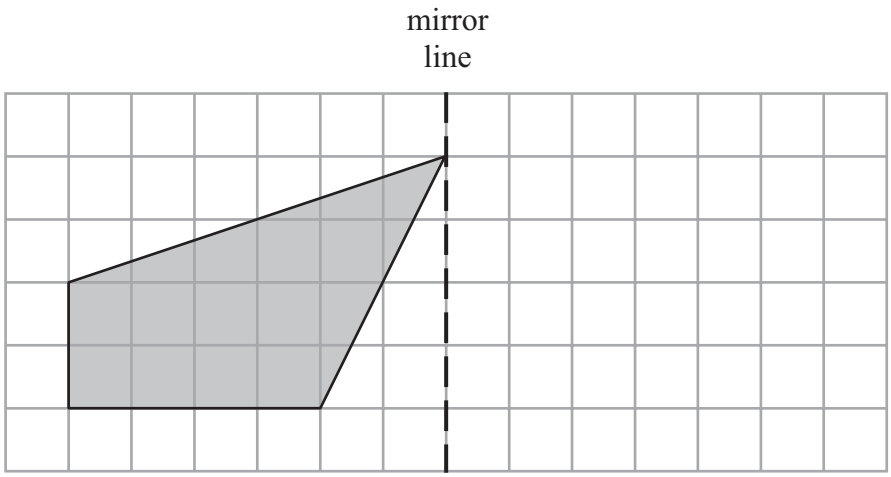
9 13 17 21 25

.....

(1)

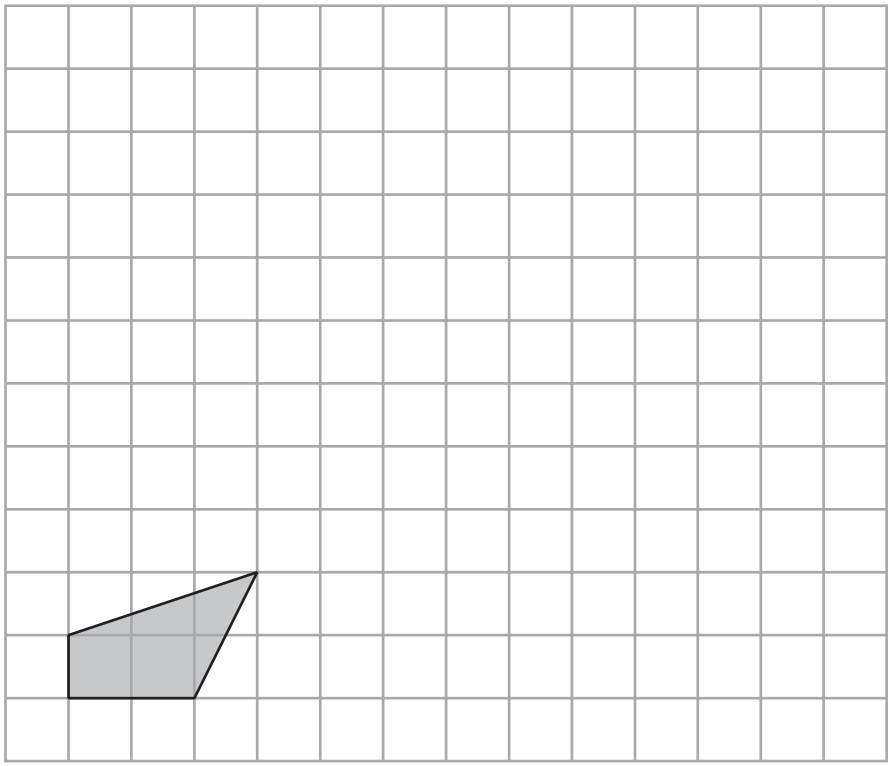
(Total for Question 6 is 6 marks)

12



(a) Reflect the shaded shape in the mirror line.

(2)



(b) On the grid, enlarge the shaded shape using a scale factor of 3

(2)

Here is a different shape.

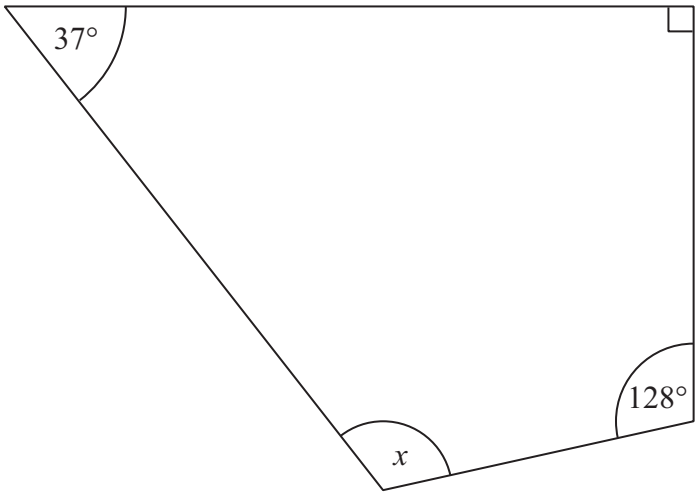


Diagram **NOT** accurately drawn

(c) Work out the size of angle x.

.....°

(2)

(Total for Question 12 is 6 marks)

15 Here is a list of numbers.

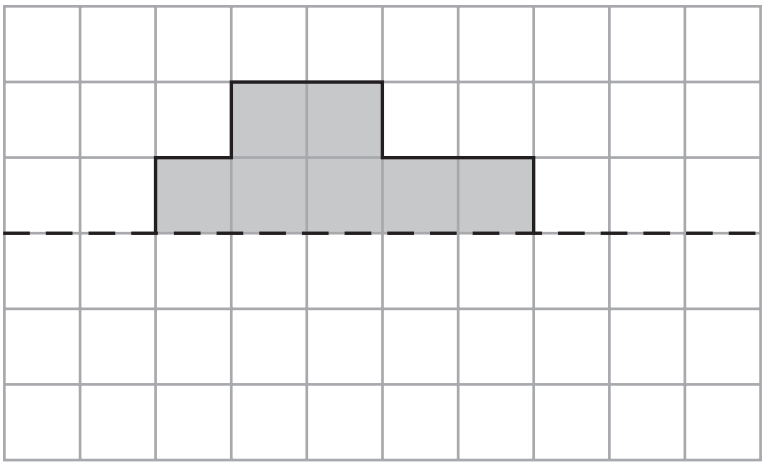
1 2 4 5 7 11 13 14 15 17

From the list, write down **three different** prime numbers that add together to make 20

....

(Total for Question 15 is 3 marks)

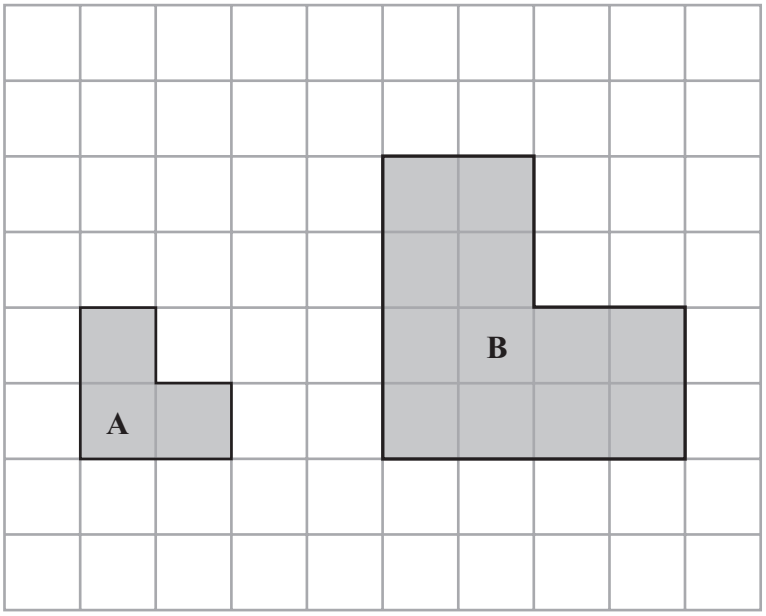
6 (a) A shaded shape is shown on the grid.



Reflect the shaded shape in the mirror line.

(1)

(b)



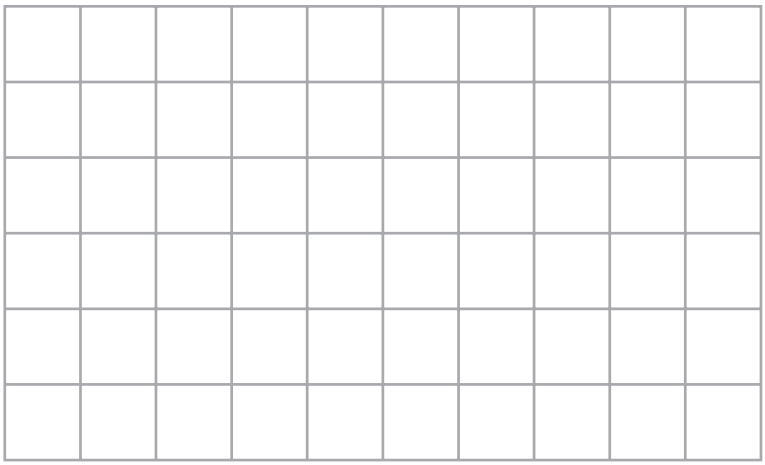
Shape **B** is an enlargement of shape **A**.

Write down the scale factor of the enlargement.

.....

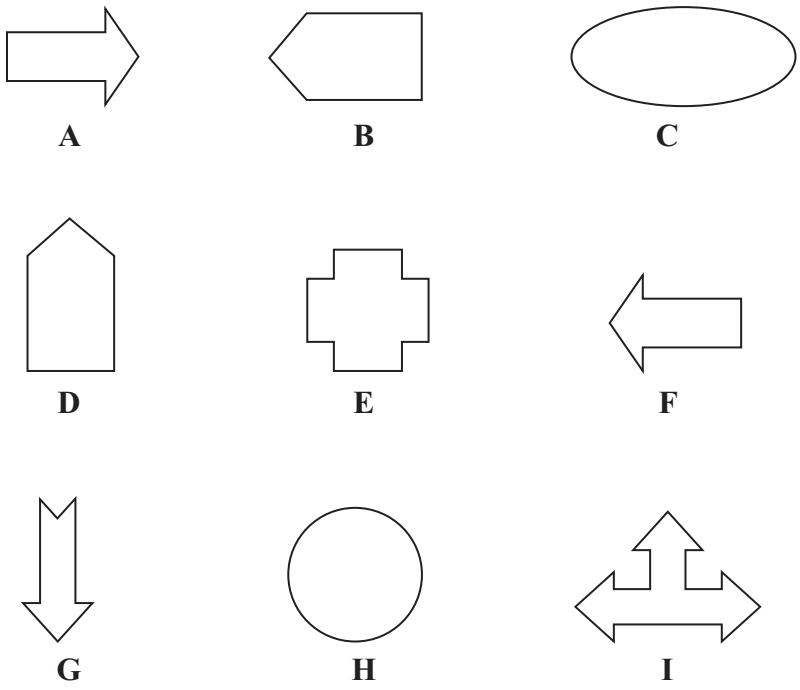
(1)

(c) On the grid, draw two parallel lines.



(1)

(d) Here are some shapes.



Write down the letters of two shapes that are congruent.

..... and .....

(1)

(Total for Question 6 is 4 marks)

17 Here is a triangle.

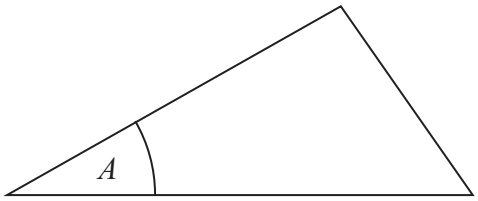


Diagram **NOT** accurately drawn

The perimeter of the triangle is 10 cm.
Angle $A = 40°$.

The triangle is enlarged by a scale factor of 3

(i) Write down the perimeter of the enlarged triangle.

..... cm

(ii) Write down the size of angle A in the enlarged triangle.

..... °

(Total for Question 17 is 2 marks)

10 Here is a list of numbers.

5 15 30 50 60 90 100 125

From the numbers in the list, write down

(i) two different numbers that add up to an even number

..... , ...

(ii) a multiple of 20

.....

(iii) a factor of 45

.....

(iv) a cube number

.....

(Total for Question 10 is 4 marks)

11 Here is a list of numbers.

11 12 13 14 15 16 17 18 19 20

From the list, write down

(a) a factor of 24

.....

(1)

(b) a multiple of 7

.....

(1)

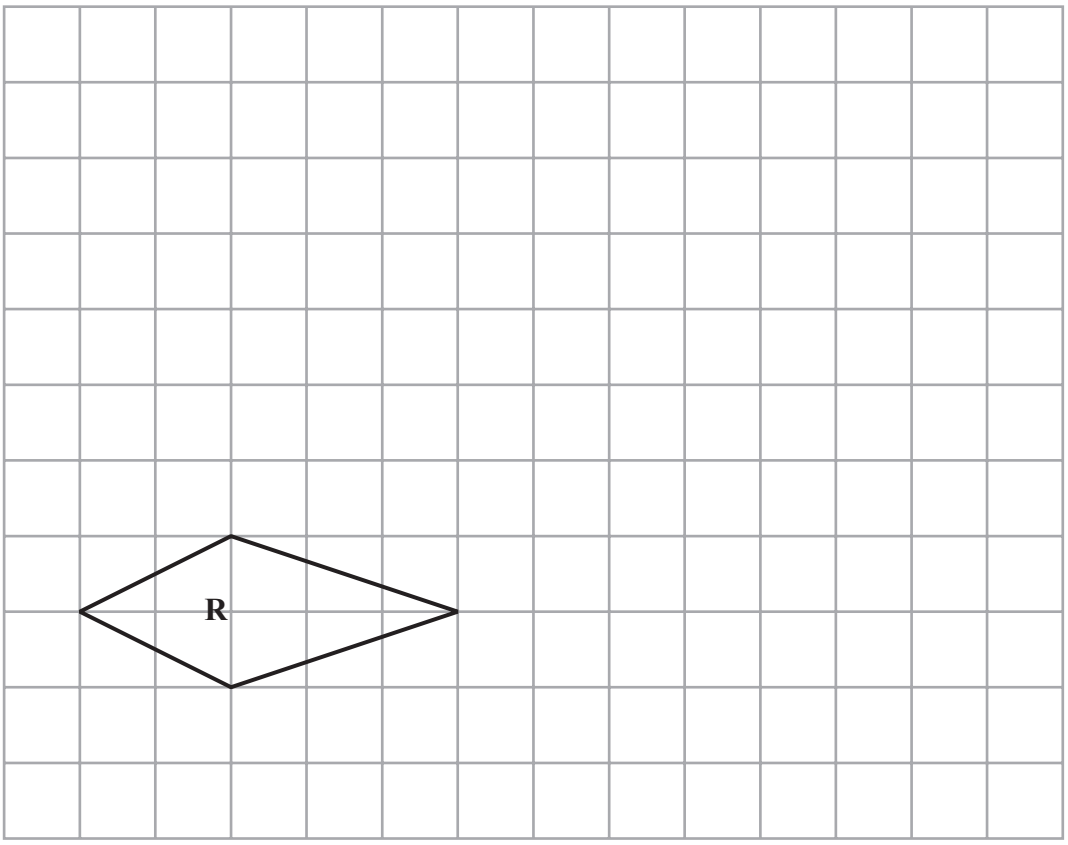
(c) a square number

.....

(1)

(Total for Question 11 is 3 marks)

16



On the grid, draw an enlargement of shape **R** with a scale factor of 2

(Total for Question 16 is 2 marks)

13 Jan writes down

one multiple of 9
two different factors of 40

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

What three numbers could Jan have written down?

....

(Total for Question 13 is 3 marks)

3 Here is a list of numbers.

2	3	5	8	10	16	21	24

From the numbers in the list,

(a) write down an odd number

.....

(1)

(b) write down the square number

.....

(1)

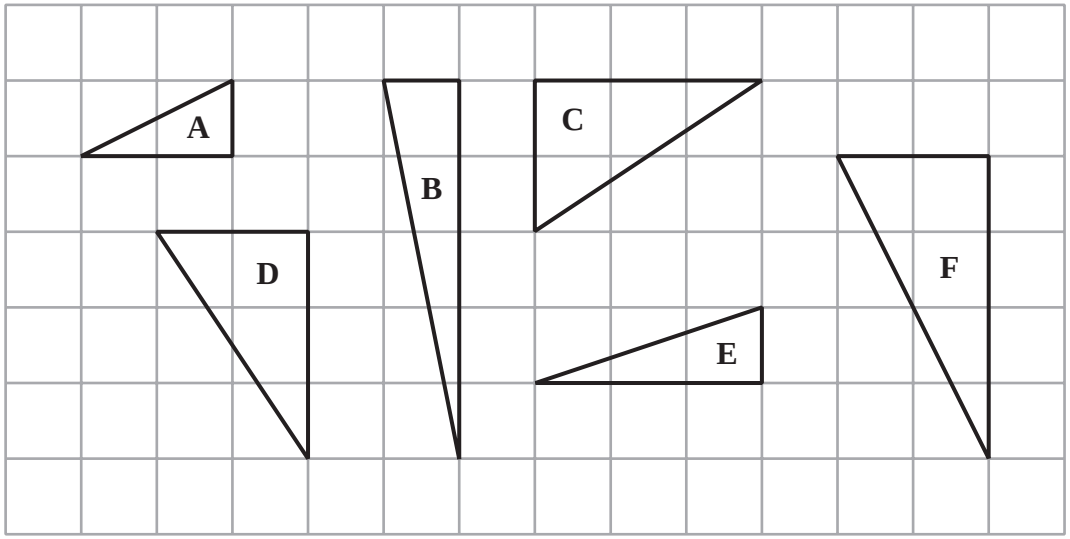
(c) write down the number which is a multiple of 6

.....

(1)

(Total for Question 3 is 3 marks)

7 Here are some triangles drawn on a grid.



Two of the triangles are congruent.

(a) Write down the letters of these two triangles.

..... and .....

(1)

One of the triangles is an enlargement of triangle **A**.

(b) (i) Write down the letter of this triangle.

.....

(ii) Write down the scale factor of the enlargement.

.....

(2)

(Total for Question 7 is 3 marks)

15 Here is a list of numbers.

2 3 4 12 13 14 15 22 24

(a) From this list, write down

(i) a factor of 6

.....

(ii) a multiple of 6

.....

(2)

Demelza says,

"All prime numbers are odd numbers".

(b) Demelza is wrong.
Explain why.

.....

.....

(1)

(Total for Question 15 is 3 marks)

7 (a) Write the number 20 400 in words.

.....

(1)

(b) Work out 3×-7

.....

(1)

(c) Work out $3 \times (2 + 7)$

.....

(1)

(d) Find the value of 2^4

.....

(1)

Here is a list of numbers.

4 5 8 9 12

(e) From the list, write down the prime number.

.....

(1)

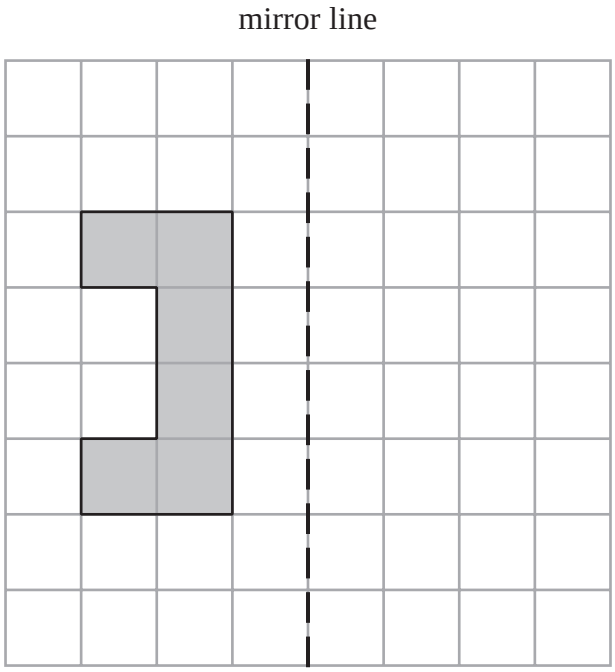
(f) Write the ratio 2 : 6 in its simplest form.

.....

(1)

(Total for Question 7 is 6 marks)

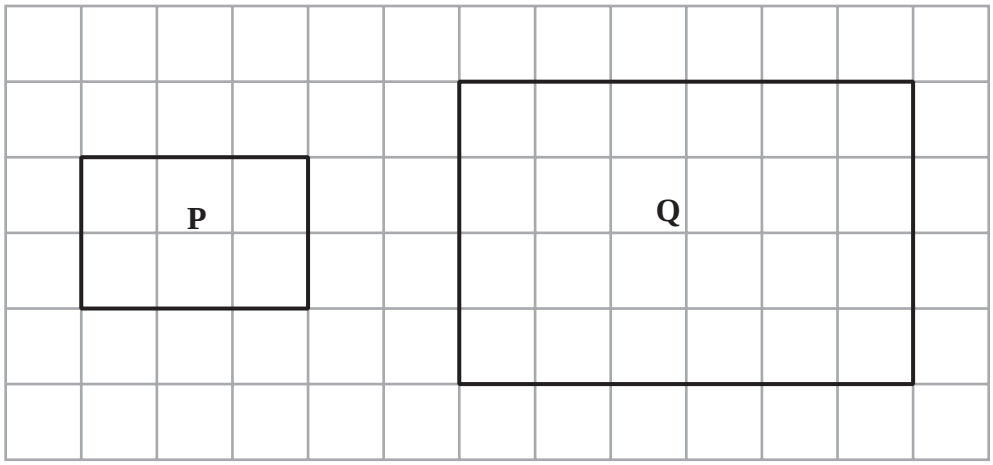
8 A shaded shape is shown on the grid.



(a) Reflect the shape in the mirror line.

(2)

Here are two rectangles.



Rectangle **Q** is an enlargement of rectangle **P**.

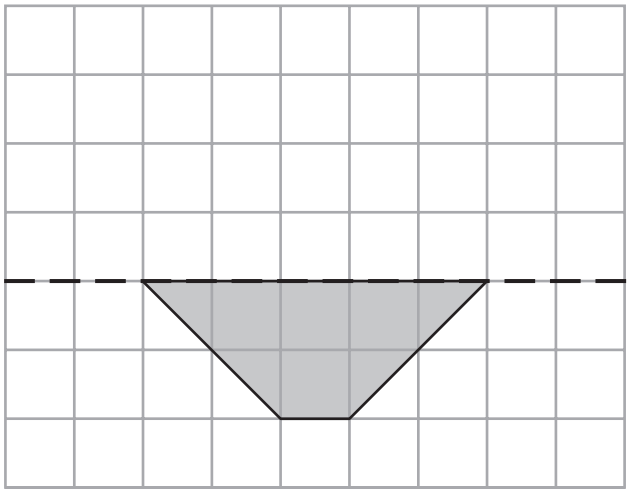
(b) Work out the scale factor of the enlargement.

.....

(1)

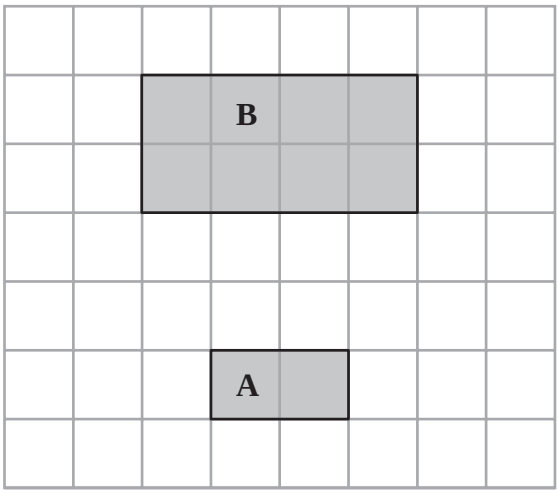
(Total for Question 8 is 3 marks)

4 (a) Reflect the shaded shape in the mirror line.



(1)

(b)



Shape **B** is an enlargement of shape **A**.

Write down the scale factor of the enlargement.

.....

(1)

(Total for Question 4 is 2 marks)

25 Express 180 as a product of its prime factors.

.....

(Total for Question 25 is 3 marks)

18 Here is a list of numbers.

1 2 4 5 8 9 12 15 16

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

.....

(1)

(b) From the list, write down **three** square numbers that add to make 21

..... , ... , ...

(2)

(Total for Question 18 is 3 marks)

13 n is a positive whole number.

(a) What type of positive whole number is $2n - 1$?

.....

(1)

(b) Write down an expression for the nth multiple of 5

.....

(1)

Alan has 4 boxes of cakes.
There is the same number of cakes in each box.
Alan has a total of t cakes.

(c) Write down an expression, in terms of t, for the number of cakes in each box.

.....

(1)

(Total for Question 13 is 3 marks)

20 (a) (i) Shade 4 sectors on diagram **A** so that it has rotational symmetry of order 4

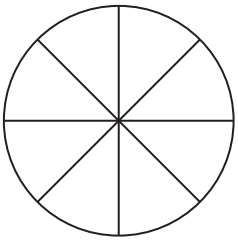


diagram **A**

(ii) Shade 4 sectors on diagram **B** so that it has rotational symmetry of order 2

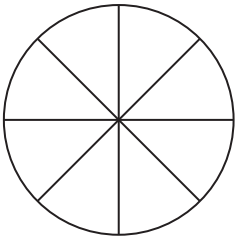
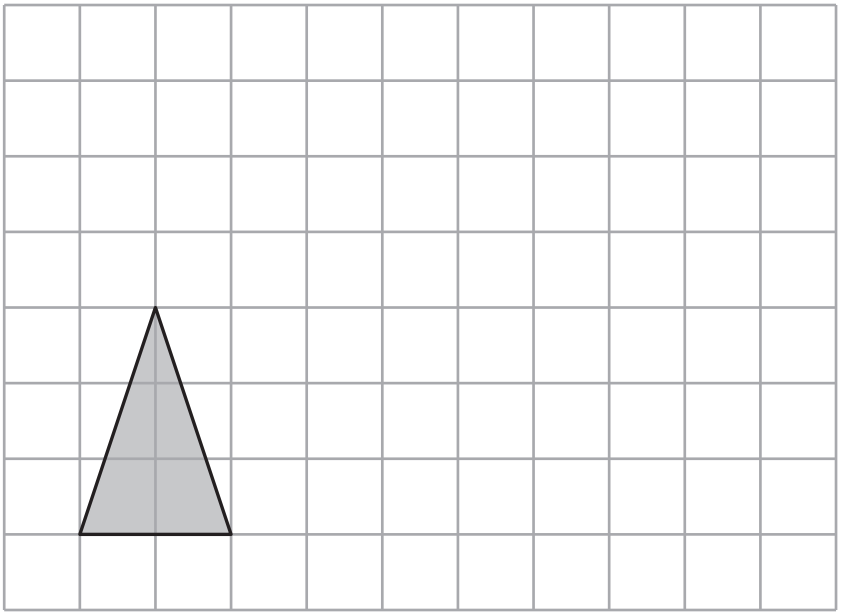


diagram **B**

(2)

(b) On the grid, draw an enlargement of the shaded triangle with a scale factor of 2



(2)

(Total for Question 20 is 4 marks)

10 Here is a list of numbers.

4 6 8 11 15 33 44

(a) From the list, write down a factor of 42

.....

(1)

(b) From the list, write down a multiple of 22

.....

(1)

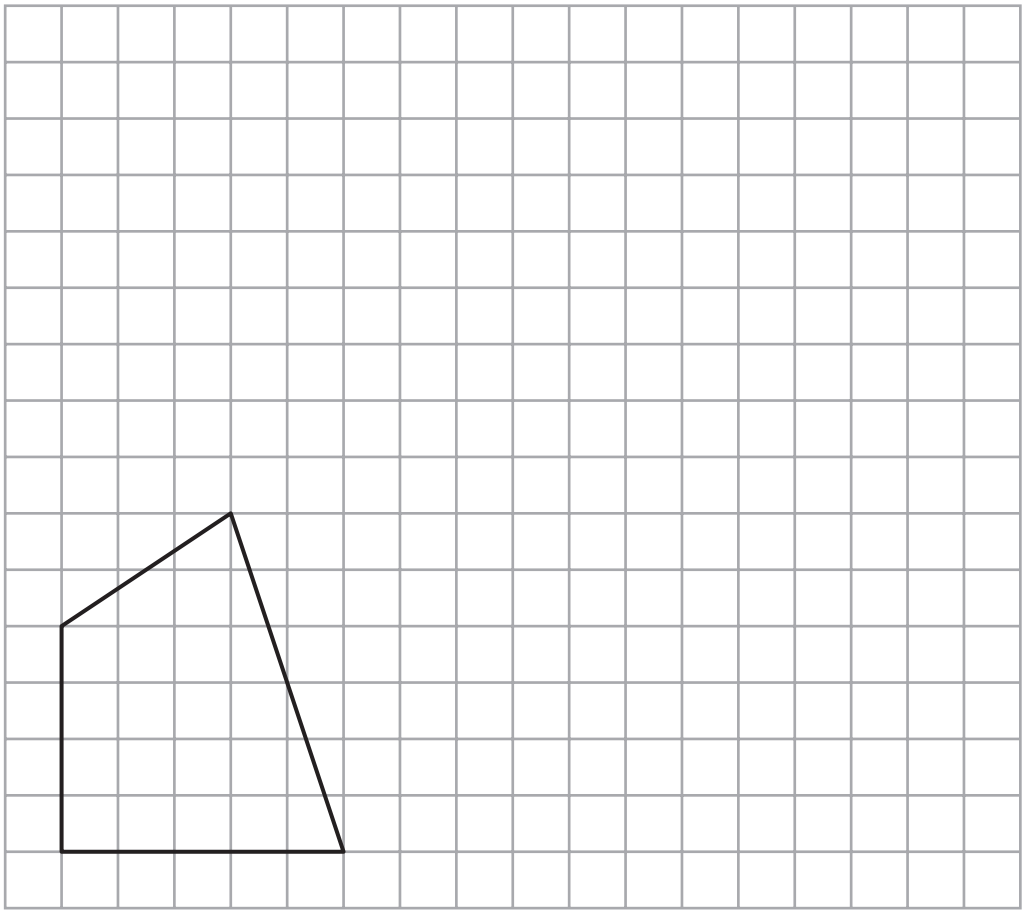
(c) From the list, write a different number in each box to make the statement true.

$\square \div \square \times \square = 12$

(1)

(Total for Question 10 is 3 marks)

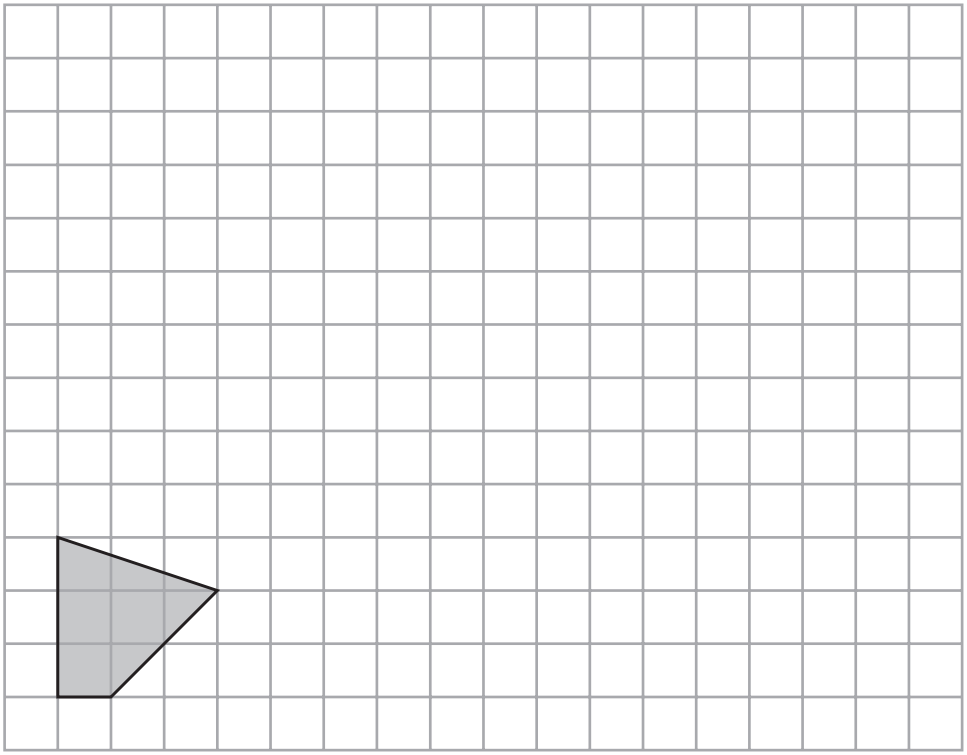
18



On the grid, draw an enlargement of the shape with a scale factor of 2

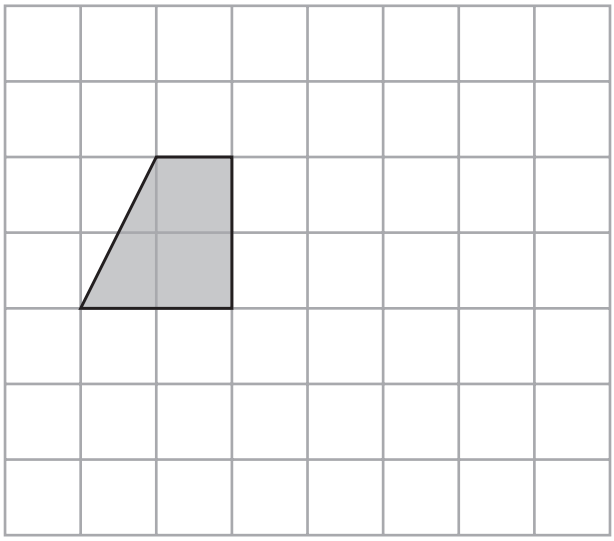
(Total for Question 18 is 2 marks)

18 (a) On the grid, draw an enlargement of the shape using a scale factor of 3



(2)

(b) On the grid below, show how the shape tessellates.
You should draw at least 6 shapes.



(2)

(Total for Question 18 is 4 marks)

13 Here is a list of numbers.

4 5 30 31 39 49 72 100

From the list, write down

(i) a multiple of 8

.....

(ii) a factor of 50

.....

(iii) a prime number

.....

(Total for Question 13 is 3 marks)

14 Miss Paisley is organising games for the children in her class.
She is going to put the children into teams.

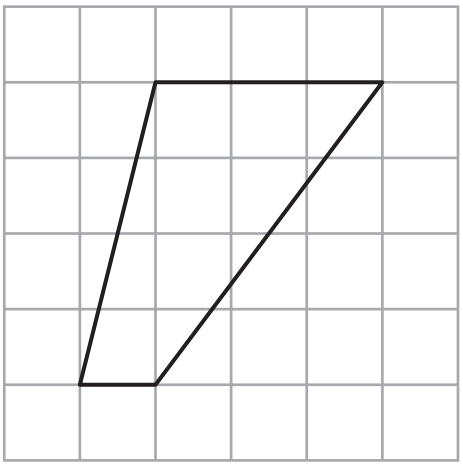
If she puts the children into teams of 4, there will be 2 children left out.
If she puts the children into teams of 5, there will be 3 children left out.

Work out the smallest possible number of children in Miss Paisley's class.

.....

(Total for Question 14 is 3 marks)

15 A quadrilateral has been drawn on a centimetre grid.



(a) Write down the mathematical name of this quadrilateral.

.....

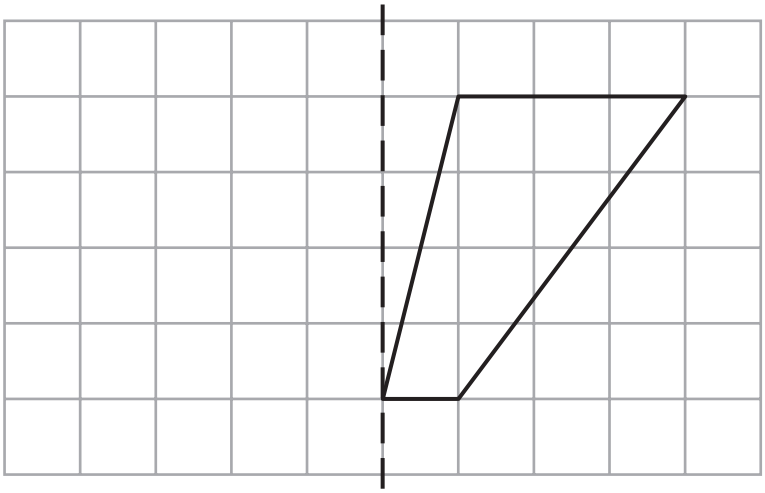
(1)

(b) Work out the area of the quadrilateral.

..... cm^2

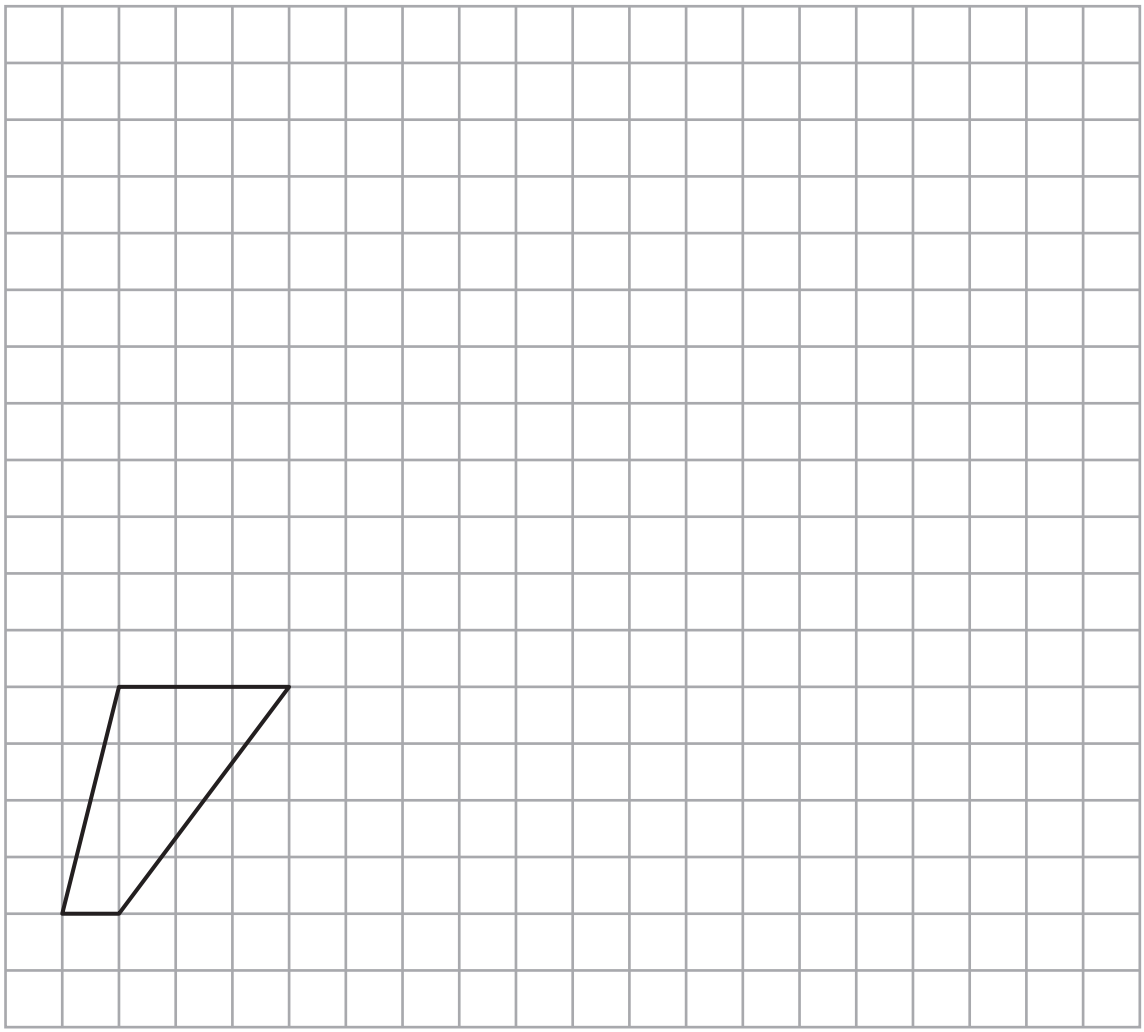
(2)

(c) On the grid below, reflect the quadrilateral in the mirror line.



mirror line

(2)



(d) On the grid, draw an enlargement of the quadrilateral with a scale factor of 3

(2)

(Total for Question 15 is 7 marks)

Question 32

22 Express 56 as the product of its prime factors.

.....

(Total for Question 22 is 2 marks)

Question 33

June 2017 | 1MA1/2F | Original Q8

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.

.....

(1)

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

.....

(1)

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

.....

(1)

(Total for Question 8 is 3 marks)

23 Write 36 as a product of its prime factors.

.....

(Total for Question 23 is 2 marks)

Question 35

November 2017 | 1MA1/2F | Original Q2

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

.....

(Total for Question 2 is 1 mark)

Question 36

7 Steve says,

> "There are more prime numbers between 20 and 30 than there are between 10 and 20"

Is Steve right?
You must show how you get your answer.

(Total for Question 7 is 2 marks)

14 a and b are odd numbers.

(a) Give an example to show that the value of $2(a + b)$ is a multiple of 4

(2)

(b) Show that, when a and b are both odd numbers, the value of $2(a + b)$ will always be a multiple of 4

(2)

(Total for Question 14 is 4 marks)

Question 38

3 Write down all the factors of 18

.....

(Total for Question 3 is 2 marks)

9 Nidah writes down two different prime numbers.

She adds together her two numbers.
Her answer is a square number less than 30

Find two prime numbers that Nidah could have written down.

..... , ...

(Total for Question 9 is 2 marks)

Question 40

5 Write down the first even multiple of 7

.....

(Total for Question 5 is 1 mark)

Question 41

11 Write down an example to show that each of the following two statements is **not** correct.

(a) The factors of an even number are always even.

.....

(1)

(b) All the digits in odd numbers are odd.

.....

(1)

(Total for Question 11 is 2 marks)

18 A = {multiples of 5 between 14 and 26}

B = {odd numbers between 14 and 26}

(a) List the members of $A \cup B$

.....

(2)

(b) Describe the members of $A \cap B$

.....

(1)

(Total for Question 18 is 3 marks)

Question 43

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.

....

(Total for Question 6 is 3 marks)

10 (a) Write down all the prime numbers between 20 and 30

.....

(2)

Catherine says,

"2 is the only even prime number."

(b) Is Catherine right?
You must give a reason for your answer.

.....

.....

(1)

(Total for Question 10 is 3 marks)

21 (a) Find the lowest common multiple (LCM) of 40 and 56

.....

(2)

$A = 2^3 \times 3 \times 5$ $B = 2^2 \times 3 \times 5^2$

(b) Write down the highest common factor (HCF) of A and B.

.....

(1)

(Total for Question 21 is 3 marks)

Question 46

6 Write down all the factors of 30

.....

(Total for Question 6 is 2 marks)

Question 47

3 Here is a list of numbers.

3 5 7 12 15 18 20

From the list, write down a factor of 10

.....

(Total for Question 3 is 1 mark)

Question 48

November 2018 | 1MA1/1F | Original Q10

10 Write down two prime numbers that have a sum of 32

..... , ...

(Total for Question 10 is 2 marks)

Question 49

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.

.....

(Total for Question 15 is 3 marks)

Question 50

4 Write down a prime number that is between 20 and 30

.....

(Total for Question 4 is 1 mark)

Question 51

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

.....

(Total for Question 24 is 2 marks)

Question 52

June 2019 | 1MA1/2F | Original Q3

3 Write down two factors of 15

.....

(Total for Question 3 is 1 mark)

Question 53

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

.....

(Total for Question 2 is 1 mark)

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

.....

(Total for Question 20 is 3 marks)

Question 55

November 2019 | 1MA1/3F | Original Q1

1 Write down two factors of 12

..... , ...

(Total for Question 1 is 1 mark)

Question 56

November 2019 | 1MA1/3F | Original Q4

4 Here is a list of numbers.

7 8 15 16 18 22

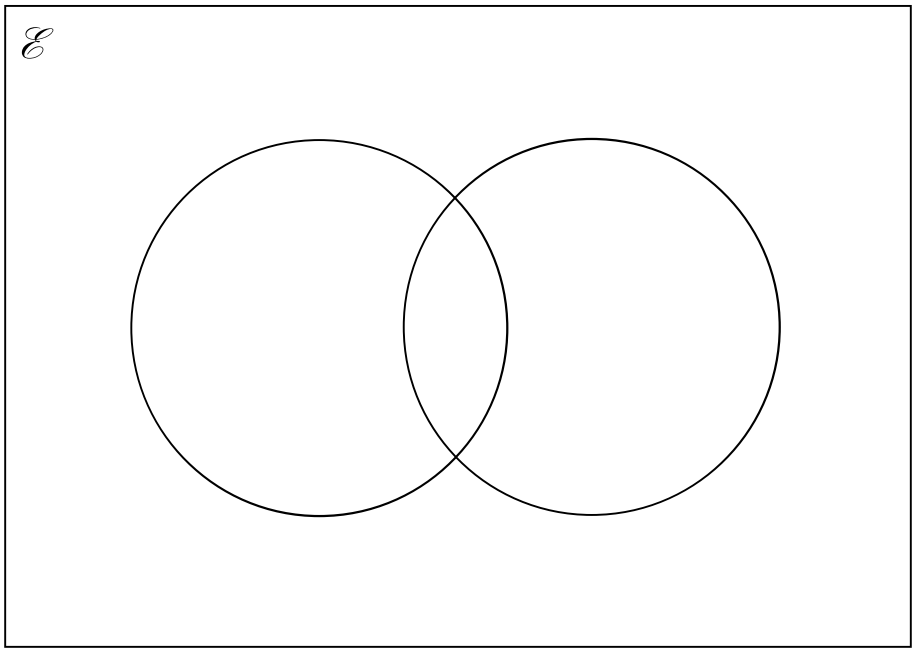
Write down the number from the list that is a multiple of 6

.....

(Total for Question 4 is 1 mark)

20 $\mathscr{E}$ = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13}
A = {multiples of 3}
B = {even numbers}

Complete the Venn diagram for this information.



(Total for Question 20 is 4 marks)

2 Here is a list of numbers.

5 11 18 22 29

From the list, write down a multiple of 3

.....

(Total for Question 2 is 1 mark)

Question 59

12 Lucy uses a code to open a lock.

The code is a letter followed by a 2-digit number.

The letter is L or U.
The number is a prime number between 20 and 30

Write down all the possibilities for Lucy's code.

.....

.....

.....

(Total for Question 12 is 2 marks)

21 (a) Write 84 as a product of its prime factors.

.....

(2)

(b) Find the lowest common multiple (LCM) of 60 and 84

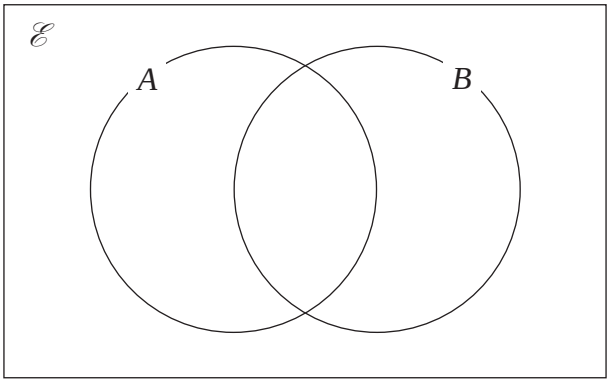
.....

(2)

(Total for Question 21 is 4 marks)

22 $\mathscr{E} = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$
$A = \{\text{even numbers}\}$
$B = \{\text{factors of } 10\}$

(a) Complete the Venn diagram for this information.



(3)

A number is chosen at random from the universal set, $\mathscr{E}$

(b) Find the probability that this number is in the set $A \cap B$

.....

(2)

(Total for Question 22 is 5 marks)

Question 62

November 2021 | 1MA1/2F | Original Q6

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.

.....

(1)

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

.....

(1)

(Total for Question 6 is 2 marks)

22 (a) Find the Highest Common Factor (HCF) of 60 and 84

.....

(2)

(b) Find the Lowest Common Multiple (LCM) of 24 and 40

.....

(2)

(Total for Question 22 is 4 marks)

2 Write down two factors of 35

.....

(Total for Question 2 is 1 mark)

24 Write 124 as a product of its prime factors.

.....

(Total for Question 24 is 2 marks)

Question 66

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

.....

(Total for Question 4 is 1 mark)

Question 67

3 Write down two factors of 12

....

(Total for Question 3 is 1 mark)

Question 68

21 Work out the lowest common multiple (LCM) of 24 and 56

.....

(Total for Question 21 is 2 marks)

Question 69

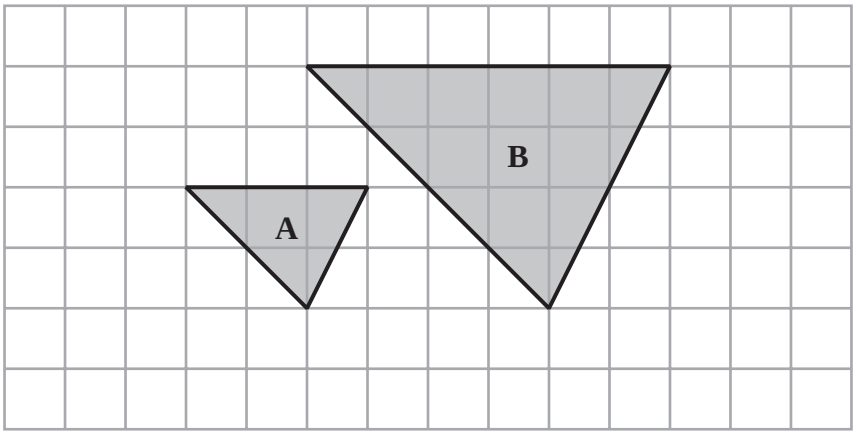
November 2022 | 1MA1/1F | Original Q4

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

.....

(Total for Question 4 is 1 mark)

11 Here are two triangles on a grid.



Triangle **B** is an enlargement of triangle **A**.

(a) (i) Write down the scale factor of the enlargement.

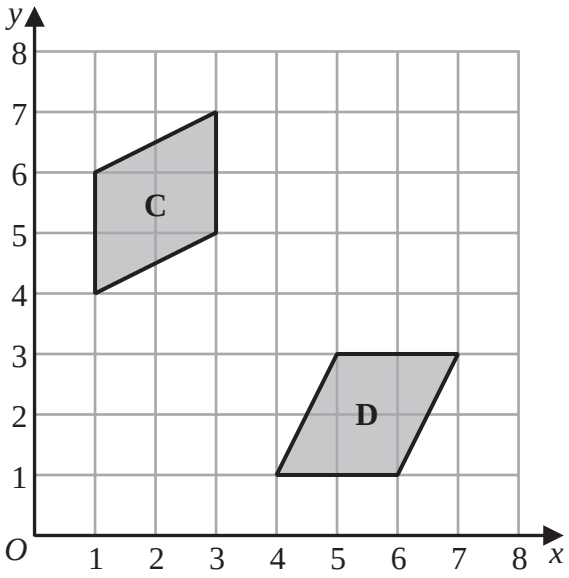
.....

(1)

(ii) On the grid, mark with a cross (×) the centre of enlargement.

(1)

Here are two parallelograms on a coordinate grid.



Parallelogram **D** is a reflection of parallelogram **C**.

(b) (i) On the grid, draw the mirror line.

(1)

(ii) Write down an equation of this mirror line.

.....

(1)

(Total for Question 11 is 4 marks)

19 Write 500 as a product of powers of its prime factors.

.....

(Total for Question 19 is 3 marks)

5 Here is a list of numbers.

5 11 18 22 29

From the list, write down a multiple of 3

.....

(Total for Question 5 is 1 mark)

Question 73

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

..... , ... , ...

(Total for Question 7 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?

.....

(Total for Question 5 is 1 mark)

Question 75

21 Write 60 as a product of its prime factors.

.....

(Total for Question 21 is 2 marks)

24 A and B are numbers such that

$$A = 2^2 \times 3^4 \times 7$$
$$B = 3^2 \times 7^2$$

(a) Find the highest common factor (HCF) of A and B.

.....

(1)

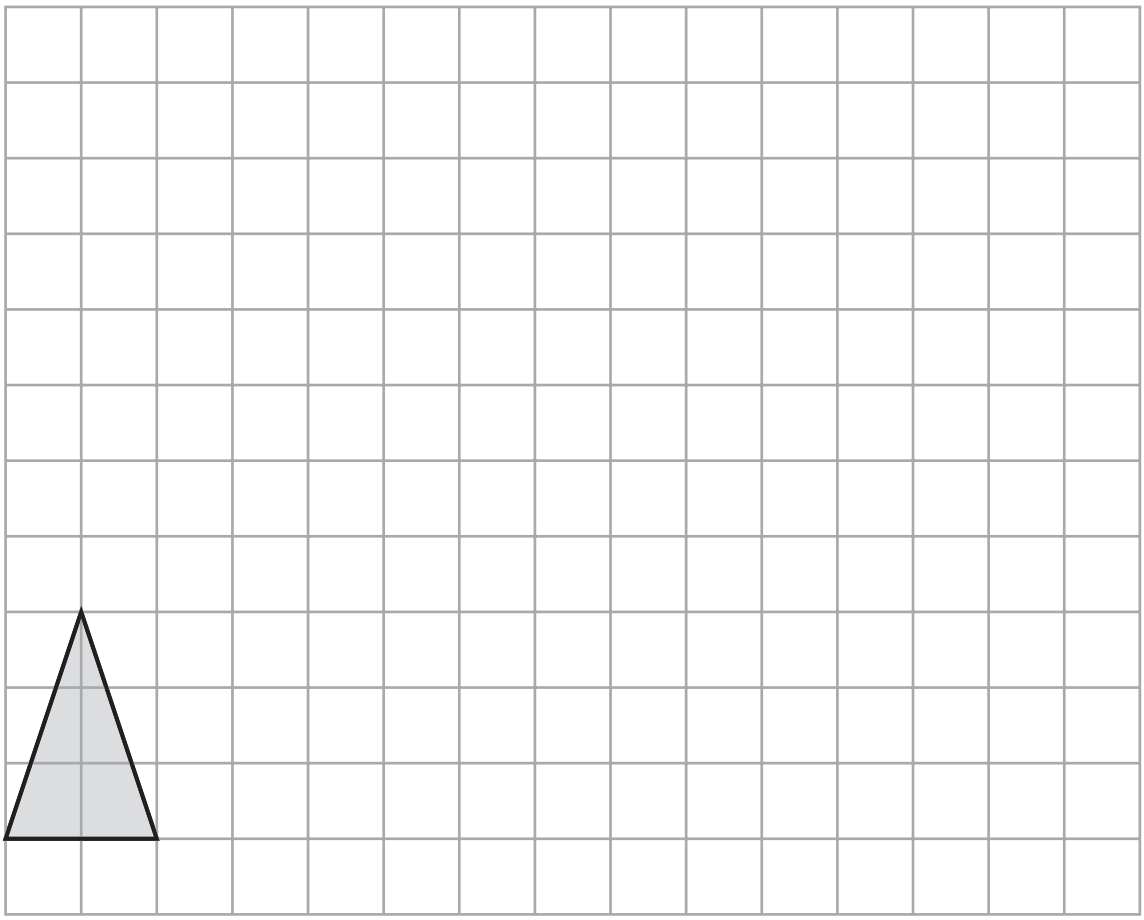
(b) Find the lowest common multiple (LCM) of A and B.

.....

(2)

(Total for Question 24 is 3 marks)

11



On the grid, draw an enlargement of the triangle with a scale factor of 3

(Total for Question 11 is 2 marks)

20 (a) Write 156 as a product of its prime factors.

.....

(2)

(b) Find the highest common factor (HCF) of 156 and 130

.....

(2)

(Total for Question 20 is 4 marks)

Question 79

1 Write down two factors of 18

..... , ...

(Total for Question 1 is 1 mark)

Question 80

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

.....

(Total for Question 4 is 1 mark)

21 (a) Write 90 as a product of its prime factors.

.....

(2)

$A = 2^2 \times 3$

$B = 2 \times 3^2$

(b) Write down the lowest common multiple (LCM) of A and B.

.....

(1)

(Total for Question 21 is 3 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.

(Total for Question 8 is 3 marks)

Question 83

June 2024 | 1MA1/3F | Original Q12

12 Write down three prime numbers that are between 20 and 40

..... , ... , ...

(Total for Question 12 is 2 marks)

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

.....

(Total for Question 22 is 2 marks)

4 Write down the multiple of 9 that is between 20 and 30

.....

(Total for Question 4 is 1 mark)

Question 86

3 Write down **two** factors of 16

.....

(Total for Question 3 is 1 mark)

16 (a) Write 126 as a product of its prime factors.

.....

(2)

(b) Find the highest common factor (HCF) of 126 and 210

.....

(2)

(Total for Question 16 is 4 marks)

4 Write down a multiple of 8 that is between 25 and 35

.....

(Total for Question 4 is 1 mark)

19 Find the highest common factor (HCF) of 54 and 120

.....

(Total for Question 19 is 2 marks)

20 (a) Express 250 as a product of its prime factors.

.....

(2)

(b) Find the lowest common multiple (LCM) of 30 and 25

.....

(2)

(Total for Question 20 is 4 marks)

Question 91

5 Write down two factors of 32

..... , ...

(Total for Question 5 is 1 mark)