



Properties of Number

Reasoning

Name: _____

Class: _____

Date: _____

Time:

Marks: **54 marks**

Comments:

Q1.

The numbers in this sequence increase by the same amount each time.

Write the missing numbers.

42 49 63

2 marks

Q2.

Write **all** the common multiples of 3 and 8 that are **less than 50**

1 mark

Q3.

Complete this sentence.

Every number with a factor of **10** must also have factors of

and and

1 mark

Q4.

Here are five number cards.

48 49 50 51 52

Use each card **once** to make every statement below correct.

- is a multiple of 3
- is a multiple of 4
- is a multiple of 5
- is a multiple of 6
- is a multiple of 7

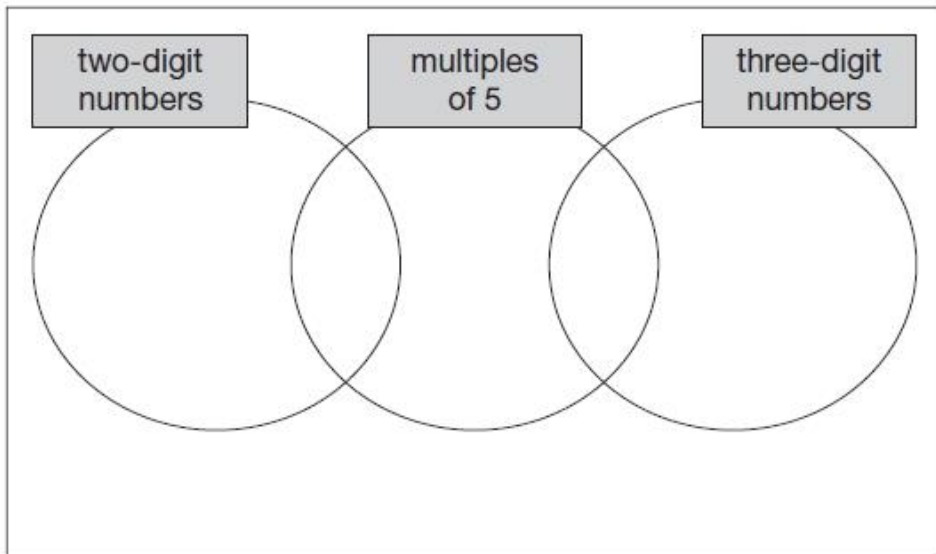
2 marks

Q5.

Here is a diagram for sorting numbers.

Write **each** number in its correct place on the diagram.

2 20 201 2000



2 marks

Q6.

In the circles, write a multiple that belongs to each set.

One has been done for you.

numbers from 1 to 99 — multiple of 10 — (50)

numbers from 101 to 199 — multiple of 20 — ()

numbers from 201 to 299 — multiple of 30 — ()

numbers from 301 to 399 — multiple of 40 — ()

2 marks

Q7.

Chen uses these digit cards.

5 6 9

She makes a 2-digit number and a 1-digit number.

She multiplies them together.

Her answer is a **multiple of 10**

What could Chen's multiplication be?

×

1 mark

Q8.

Here is a diagram for sorting numbers.

Write **one number** in each box.

One is done for you.

	multiple of 5	not a multiple of 5
multiple of 3	30	
not a multiple of 3		

2 marks

Q9.

A **square** number and a **prime** number have a total of 22

What are the two numbers?

$$\boxed{} + \boxed{} = 22$$

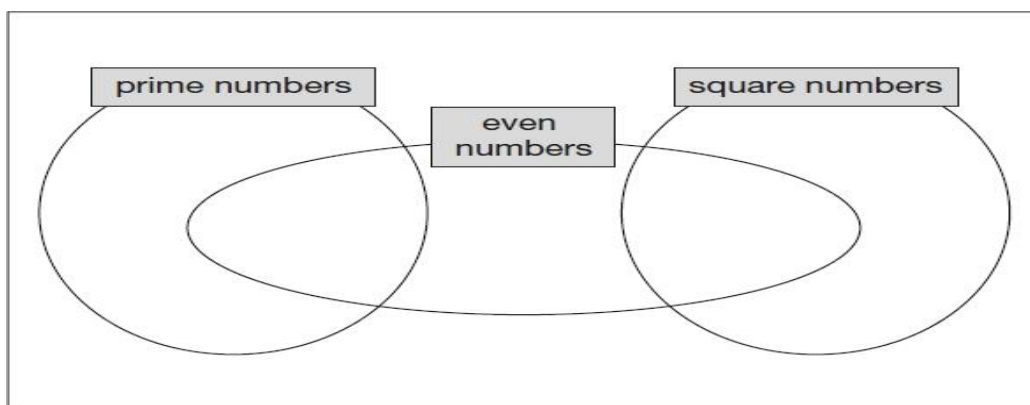
square number prime number

1 mark

Q10.

Write each number in its correct place on the diagram.

16 17 18 19



2 marks

Q11.

36 and 64 are both square numbers

They have a sum of 100

Find two **square** numbers that have a sum of **130**

and

1 mark

Q12.

Chen chooses a **prime** number.

He multiplies it by 10 and then rounds it to the nearest hundred.

His answer is **400**.

Write **all** the possible prime numbers Chen could have chosen.

2 marks

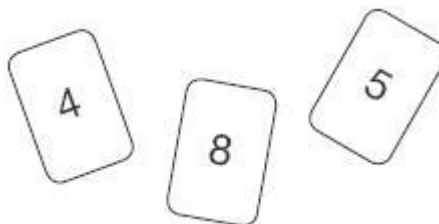
Q13.

Write three factors of 30 that are **not** factors of 15

2 marks

Q14.

Holly made a number using these digit cards.



The **hundreds** digit is greater than 4

Holly's number is **odd**.

What number did Holly make?

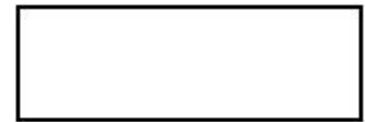


1 mark

Q15.

The factors of 11 sum to 12

Write the other number whose factors sum to 12



1 mark

Q16.

Emma thinks of two **prime** numbers.

She adds the two numbers together.

Her answer is 36

Write **all** the possible pairs of prime numbers Emma could be thinking of.

2 marks

Q17.

Here are six digit cards.



Use **all six** digit cards to make three multiples of 3



1 mark

Q18.

What's my number?

?	?	?
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It is a three-digit number.

All the digits are odd.

The digits add up to 7

What could my number be?

1 mark

Q19.

Tick the numbers that are common factors of both **12 and 18**

2

3

6

9

12

2 marks

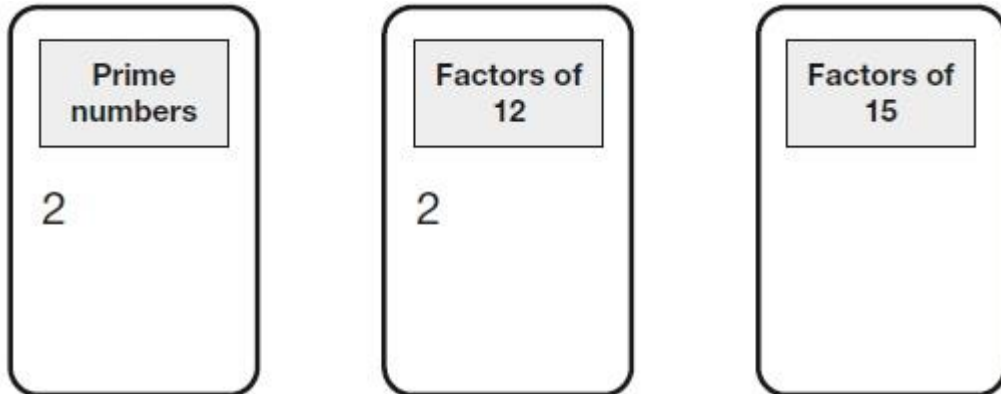
Q20.

Here are five numbers.

~~2~~ 3 4 5 6

Write each number on the correct cards.

The number 2 has been written on the correct cards for you.



2 marks

Q21.

Write all the factors of 30 which are **also** factors of 20

2 marks

Q22.

Find two **square numbers** that total 45

$$\square + \square = 45$$

1 mark

Q23.

Circle **three** numbers that add to make a **multiple of 10**

11 12 13 14 15 16 17 18 19

1 mark

Q24.

Circle the **two** prime numbers.

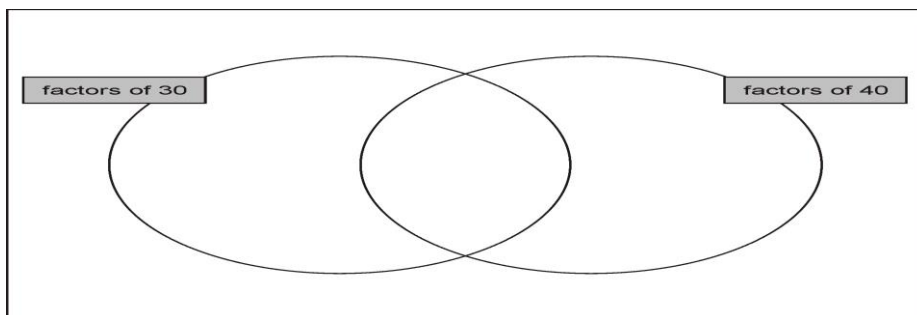
29 39 49 59 69

1 mark

Q25.

Write these numbers in the correct places on the diagram.

5 6 7 8



2 marks

Q26.

The numbers in this sequence increase by 3 each time.

3 6 9 12 . . .

The numbers in this sequence increase by 5 each time.

5 10 15 20 . . .

Both sequences continue.

Write a number **greater than 100** which will be in **both** sequences.

A large grid for showing the method. On the left side, there is a rounded rectangular box containing the text 'Show your method'. On the right side, there is a smaller empty rectangular box.

2 marks

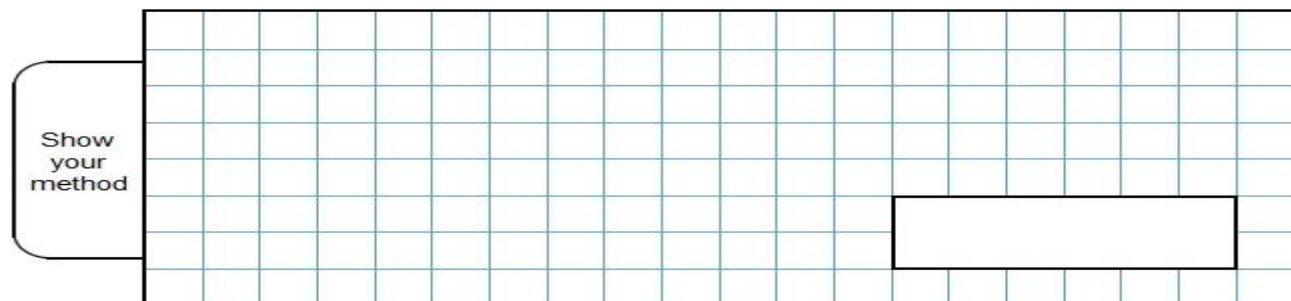
Q27.

364 is a multiple of 7 but not a multiple of 3

384 is a multiple of 3 but not a multiple of 7

Find a number between 364 and 384 that is **both** a multiple of 7 **and** a multiple of 3

Show your method



2 marks

Q28.

Here is a sorting diagram with four sections, **A**, **B**, **C** and **D**.

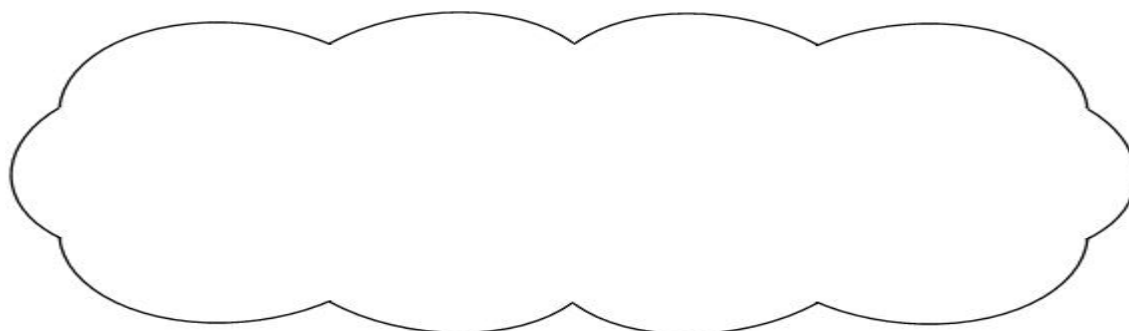
	multiple of 10	not a multiple of 10
multiple of 20	A	B
not a multiple of 20	C	D

Write a number that could go in section **C**.

1 mark

Section **B** can never have any numbers in it.

Explain why.



1 mark

Q29.

Amir says,

'All numbers that end in a 4 are multiples of 4'.



Is he correct?

Circle **Yes** or **No**.

Yes / No

Explain how you know.

A large, empty, cloud-shaped outline with a scalloped border, intended for the student to write their explanation.

1 mark

Q30.

Here is a number chart.

Every third number in the chart has a circle on it.

1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22			

The chart continues in the same way.

Here is another row in the chart.

Draw the missing circles.

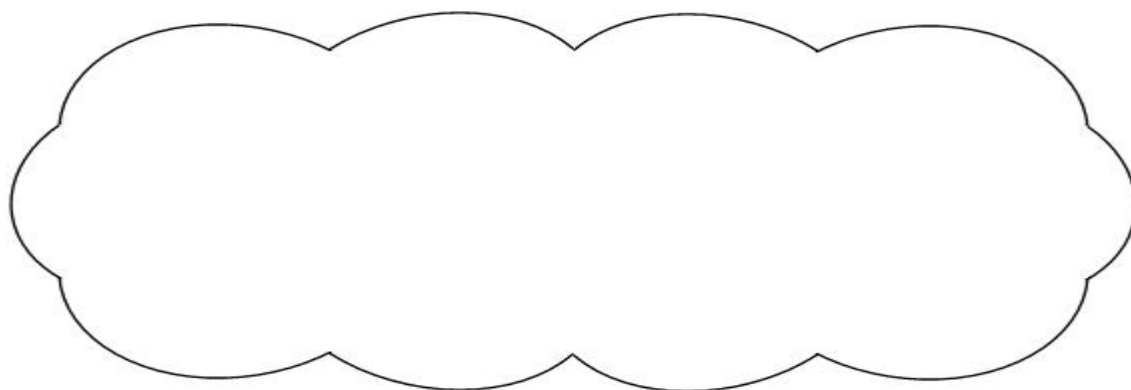
71	72	73	74	75
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1 mark

Will the number **1003** have a circle on it?
Circle **Yes** or **No**.

Yes / No

Explain how you know.



1 mark

Q31.

Write **one** number which fits **all three** of these statements.

It is a multiple of 4

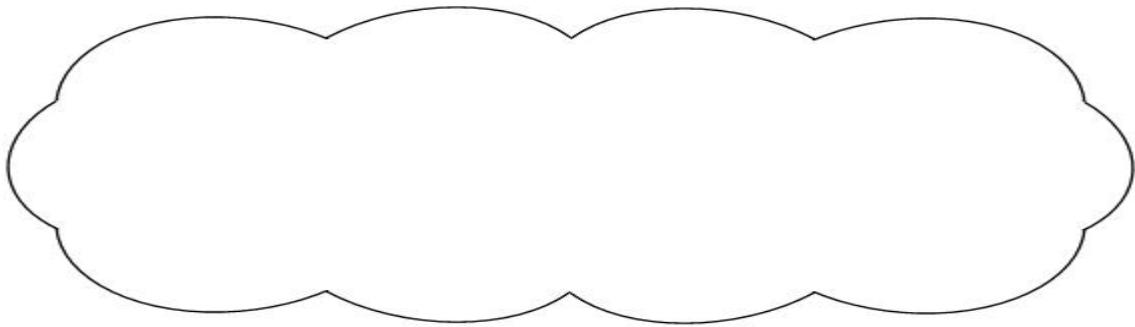
It is a multiple of 6

It ends in '8'



1 mark

Explain why a number which ends in '3' **cannot** be a multiple of 4



1 mark

Q32.

Three whole numbers add up to 50

Seb says,

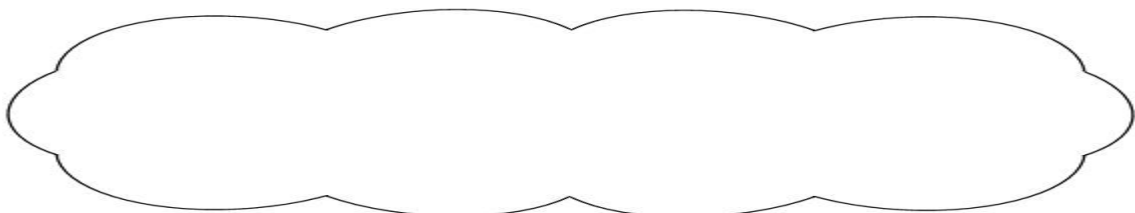
'All three numbers must be even numbers.'

Is Seb correct?

Circle **Yes** or **No**.

Yes / No

Explain how you know.



1 mark

Q33.

The numbers in this sequence increase by 10 each time.

3 13 23 ...

The sequence continues in the same way.

Write **two** numbers from the sequence that add to make a total of **96**

and

1 mark

Explain why it is **not** possible to find **three** numbers from the sequence that add to make a total of **96**

1 mark

Q34.

Circle the **prime** number.

95

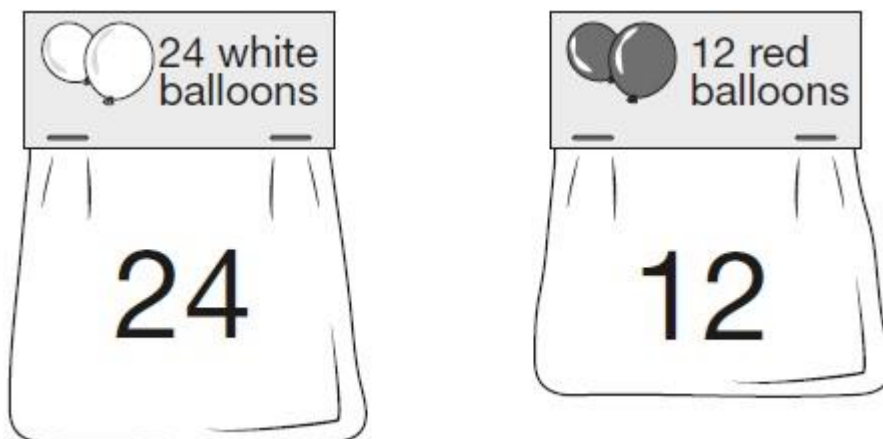
89

87

Explain how you know the other numbers are **not** prime.

1 mark

Q35.



Adam buys **6** bags of white balloons.

Chen buys **3** bags of red balloons.

Adam says,

'I have four times as many balloons as Chen.'

Explain why Adam is correct.

A large, empty, cloud-shaped outline with a scalloped border, intended for the student to write their explanation.

1 mark