

Q1.

Here are some properties of numbers.

- A Even
- B Odd
- C Prime
- D Square
- E Two-digit

(a) Which **two** properties does the number 4 have?

Circle the correct letters.

A B C D E

(1)

(b) Can one number have **all** of the properties?

Tick a box.

Yes

No

Cannot tell

Give a reason for your answer.

.....

.....

(1)

(c) Write down a number with **three** of the properties.

State which properties it has.

.....

.....

.....
 Number

Properties,,

(2)
 (Total 4 marks)

Q2.

Which of these numbers is **one more** than a multiple of 5?

Circle your answer.

15 19 26 30

(Total 1 mark)

Q3.

Which of these numbers has **exactly three** factors?

Circle your answer.

3 4 5 6

(Total 1 mark)

Q4.

Lucy says,

“3 is odd and 2 is even,
 so when you add a multiple of 3 to a multiple of 2 the answer is always odd.”

Is she correct?

Write down a calculation to support your answer.

.....

(Total 1 mark)

Q5.

$$x + y = 100$$

x is a square number.

y is a prime number.

Work out the values of x and y .

.....

.....

.....

.....

$$x = \dots\dots\dots y = \dots\dots\dots$$

(Total 2 marks)

Q6.

- (a) Write 200 as the product of prime factors.
Give your answer in index form.

Answer

(3)

- (b) Circle the **two pairs** of numbers that have

Highest Common Factor (HCF) 4

and

Least Common Multiple (LCM) 60

4 and 60

4 and 30

4 and 12

12 and 30

12 and 20

(2)

(Total 5 marks)

Q7.

- (a) Write 132 as a product of prime factors.

Answer

(2)

- (b) Work out the Highest Common Factor (HCF) of 110 and 132

Answer

(2)

(Total 4 marks)

Q8.

a and b are different prime numbers with $a > b$

- (a) Give an example to show that $a^2 + b^2$ could be even.

.....

(1)

- (b) Give an example to show that $a^2 + b^2$ could be odd.

.....

.....

(1)
 (Total 2 marks)

Q9.(a) Write down the **three** multiples of 30 between 100 and 200

.....

Answer,,

(2)

(b) Circle the number in the list that is **not** a factor of 30

2 3 5 6 8

(1)
 (Total 3 marks)

Q10.Rashid writes down some multiples of 3 and 4

3 6 9 12 15 18 21 24 27

4 8 12 16 24 28

(a) He notices that 12 and 24 are in both lists.

What will be the next number that is in both lists?

Answer

(1)

(b) Is 120 in both lists?
 Tick a box.

Yes

No

Give a reason for your choice.

.....
.....

(1)
(Total 2 marks)

Q11.

A code is made with two 2-digit numbers.

- The first 2-digit number is a square number bigger than 30
- The second 2-digit number is a factor of 122
- The four digits are all **different**.

What is the code?

.....
.....
.....
.....
.....
.....
.....
.....
.....

Answer

(Total 3 marks)

Q12.

(a) Put four **different** prime numbers into the boxes to make the calculation true.

$$\square + \square + \square = \square$$

(2)

(b) Why can 2 never be one of the four prime numbers used in part (a)?

.....

.....

.....

.....

.....

.....

(2)
(Total 4 marks)

Q13.

a is an odd number.

b is an even number.

Tick the correct statement.

- | | | |
|-------------|----------------------|--------------------------|
| $a^2 + b^2$ | is always even | <input type="checkbox"/> |
| $a^2 + b^2$ | is always odd | <input type="checkbox"/> |
| $a^2 + b^2$ | could be even or odd | <input type="checkbox"/> |

Give a reason for your answer.

.....

.....

.....

(Total 2 marks)

Q14.

(a) As a product of prime factors $40 = 2^3 \times 5$

Write 50 as a product of prime factors.

.....

Answer

(2)

(b) Work out the Least Common Multiple of 40 and 50

.....

Answer

(2)

(Total 4 marks)

Q15.

Jenny buys packs of sausages and packs of bread rolls.
 There are

- 25 bread rolls in a pack
- 8 sausages in a pack

She needs exactly **twice** as many sausages as bread rolls.

Work out the smallest number of each pack she could buy.

.....

.....
 Answer packs of bread rolls

..... packs of sausages

(Total 3 marks)

Q16.(a) Circle the multiple of 7

13 22 27 35

(1)

(b) Circle the factor of 36

8 12 19 72

(1)

(c) Circle the number that is **not** a square number.

64 36 121 48

(1)

(Total 3 marks)

Q17.(a) Circle the multiple of 9

6 12 13 16 20 27

(1)

(b) Circle the factor of 40

6 12 13 16 20 27

(1)

(c) Circle the square number.

6 12 13 16 20 27

(1)

(d) Circle the prime number.

6 12 13 16 20 27

(1)
(Total 4 marks)

Q18. Here is a number sequence.

31 26 21 16 11 ...

(a) What is the next term in the sequence?

Answer

(1)

(b) Write down the rule for continuing the sequence.

Answer

(1)

(c) What is the first **negative** term in the sequence?

Answer

(1)

(d) Here are the first five terms of another number sequence.

2 4 8 16 32 ...

Tick whether each of the following is true or false.

All the numbers in this sequence are even True False

To continue the sequence you add 2 True False

48 is a number in this sequence True False

(3)
(Total 6 marks)