

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 is a cube number?

Circle your answer.

3 9 27 100

(Total 1 mark)

Q3.

$$x + y = 100$$

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)

Q4.

$$N = 2a + b$$

a is a two-digit square number.

b is a two-digit cube number.

What is the **smallest** possible value of N ?

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.....

.....

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.....

.....

Answer

(Total 3 marks)

Q5.

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.

.....

.....

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(1)

(Total 2 marks)

Q6.(a) Circle the **two** numbers that add up to 100

21 34 35 65 76

(1)

(b) Circle the **two** numbers that are even.

21 34 35 65 76

(1)

(c) The number 31 is 5 less than the square number 36
Circle the number that is 5 **less** than a square number.

21 34 35 65 76

(1)

(d) Circle the number that is 5 **more** than a square number.

21 34 35 65 76

(1)
(Total 4 marks)

Q7. Put these in order starting with the smallest value.

$\frac{13}{4}$

$3\frac{1}{2}$

3.15

$\sqrt{9}$

You **must** show your working.

.....

.....

.....

.....

.....

Smallest

.....

.....

Largest

(Total 3 marks)

Q8. Use your calculator to work out

(a) $\sqrt{576}$

Answer

(1)

(b) $2.3^2 + \sqrt{5}$

Answer

(1)

(c) $\frac{1}{0.4^2}$

Answer

(1)

(Total 3 marks)

Q9.(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)

Q10.(a) Write down the value of 10^3

.....

Answer

(1)

(b) Work out the value of 0.4×0.2

.....

Answer

(1)
(Total 2 marks)

Q11. Complete this table.

3^0	3^1	3^2	3^3	3^4	3^5	3^6	3^7
1	3	9			243	729	2187

(Total 2 marks)

Q12.(a) Work out the value of 7^3

.....

Answer

(1)

(b) The sum of two consecutive cube numbers is 341.

Work out the two numbers.

.....

.....

.....

.....

Answer and

(2)
(Total 3 marks)

Q13.(a) Write down the value of 5^3

Answer

(1)

(b) Write down the value of $\sqrt{121}$

Answer

(1)

(c) Between which **two** consecutive whole numbers does $\sqrt{40}$ lie?

.....

.....

Answer and

(2)
(Total 4 marks)

Q14.(a) Work out the value of $3^3 + 4^2$

.....
.....

Answer

(2)

(b) Work out $5^3 - 10^2$

Give your answer as a power of 5.

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

Answer

(3)

(Total 5 marks)

Q15.

(a) Work out $\sqrt{1.96}$

Answer

(1)

(b) Work out $\frac{10.6 - 7.45}{2.5}$

Answer

(1)

(Total 2 marks)

Q16.(a) Show that 125 is a cube number.

.....
.....

(1)

(b) $125 = a + b$

a and b are square numbers.

Find **two** possible pairs of values for a and b .

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.....

.....

$a = \dots\dots\dots b = \dots\dots\dots$

and $a = \dots\dots\dots b = \dots\dots\dots$

(2)
(Total 3 marks)

Q17.(a) Circle the **two** multiples of 7

- 6 10 16 21 25 27 32 35

(2)

(b) Circle the **two** factors of 30

- 6 10 16 21 25 27 32 35

(2)

(c) Circle the **two** square numbers.

- 6 10 16 21 25 27 32 35

(2)
(Total 6 marks)