

Q1

1

Identify the correct calculation that needs to be carried out.

Electricity used = new reading - old reading.

$$\text{Electricity used} = 7155 - 7095$$

[1]

Write as a column and subtract the numbers in the units column.

$$\begin{array}{r} 7155 \\ - 7095 \\ \hline 0 \end{array}$$

5-9 would be negative, so we need to borrow from the next column.

This turns the 1 into a 0.

We can then continue subtracting as normal.

$$\begin{array}{r} 0 \\ 7\overset{1}{\cancel{1}}55 \\ - 7095 \\ \hline 0060 \end{array}$$

Gary uses 60 units and they cost 15 pence each.

$$\begin{array}{r} 15 \\ \times 60 \\ \hline 00 \\ 900 \\ \hline 900 \end{array}$$

Correct method [1]

Correct answer [1]

900

Correct method [1]

Correct answer [1]

Convert 900 pence into pounds using £1 = 100 pence.

$$900 \text{ pence} = \text{£}9$$

£9 [1]

Q2

2

The inequality $-2 < x \leq 4$ means "numbers that are greater than -2, and less than or equal to 4"

This means that -2 **will not be** included, and 4 **will be** included

The bottom-right option; -1, 0, 1, 2, 3, 4 [1]

Q3

3

Thinking of an example of a sum that can be done with even numbers only can help.

0 can be divided exactly by 2 [1]

Other correct statements that will be accepted include:

-1 and 1 are both odd and either side of 0

Numbers that end in 0 are even

Zero remainder when divided by 2

Next number in the pattern of even numbers 8 6 4 2

Added to an even number it gives an even answer and added to an odd number it gives an odd answer

Q4

4

49 is an odd square number, $7^2=49$

Factors of 49

49, 1

7, 7

So there are 3 factors; 1, 7, 49

So the statement is correct in this case

[1]

1 is an odd square number, $1^2=1$

Factors of 1

1, 1

So there is only one factor; 1

So the statement is not correct in this case

[1]

There are of course other examples, for example 1089 is 33^2 , and has far more than 3 factors
Factors of 1089: 1, 3, 9, 11, 33, 99, 121, 363, 1089

Q5-6

5

Consider the place value of each part

two hundred thousand = 200 000
and seventeen = 17

two hundred thousand + seventeen = $200\ 000 + 17$

200 017 [1]

6

If the temperature has fallen by 26°C then you need to subtract 26°C from the starting temperature.

21 - 26

-5 °C [1]

Q7-8

7

i) Multiples of 8 are numbers that are in the 8 times table.
 $4 \times 8 = 32$.

The multiple of 8 is 32 [1]

ii) Square numbers are numbers that can be made by multiplying an integer by itself.
 $6^2 = 6 \times 6 = 36$.

The square number is 36 [1]

iii) Prime numbers are positive integers that have exactly two factors: 1 and itself.
Ignore the numbers that have other factors.

32, 34, 36, 38 all have 2 as a factor.

33, 36, 39 all have 3 as a factor.

35 has 5 as a factor.

The prime number is 37 [1]

8

Think about the numbers in chunks, 15 000 and 60

Fifteen thousand and sixty [1]

Q9-11

9

Turn the statements into a calculation.
Be careful with the negatives!

$$-3 - 7$$

$$-10 \text{ } ^\circ\text{C} \text{ [1]}$$

10

i) A cube number is the result of multiplying a number by itself 3 times.

$$3^3 = 27$$

$$27 \text{ [1]}$$

ii) A prime number is a number with exactly one factor pair, 1 and itself.

$$[1]$$

11

i) A number that divides by 7 to give an integer (whole number)

$$28 \text{ [1]}$$

ii) A number that is the product of three identical numbers, e.g. $3 \times 3 \times 3 = 27$

$$27 \text{ [1]}$$

iii) A number that is only divisible by itself and 1

$$29 \text{ (or 31)} \text{ [1]}$$

Q12-13

12

$-3 \text{ } ^\circ\text{C}$ is 11 $^\circ\text{C}$ higher than the temperature at 0100.
Therefore the temperature at 0100 is 11 $^\circ\text{C}$ lower than $-3 \text{ } ^\circ\text{C}$.
Subtract 11 from -3 .

$$-3 - 11$$

$$-14 \text{ } ^\circ\text{C} \text{ [1]}$$

13

Write each section of the number out separately

Five million is

$$5\,000\,000$$

Two hundred is

$$200$$

Seven is

$$7$$

Add these parts together

$$5\,000\,000 + 200 + 7$$

$$5\,000\,207 \text{ [1]}$$

Q14-15

14

Subtract 11° from 6°

$$6 - 11 = -5$$

-5° [1]

15

Count up from 3 to 18, checking each number to see if it divides into 36 without a remainder. E.g.:

$$36 \div 3 = 12, \text{ so 3 and 12 are factors}$$

$$36 \div 4 = 9, \text{ so 4 and 9 are factors}$$

$$36 \div 5 = 7 \text{ remainder } 1, \text{ so 5 is not a factor}$$

$$36 \div 6 = 6, \text{ so 6 is a factor}$$

As 6 already appeared and 7 would be the next one to check which has also already appeared you can stop and list out all the factors

3, 4, 6, 9, 12, 18 [2]

You need at least 4 correct factors to score 1 mark