

The Wellington School Maths Challenge

26 November 2022



Q1. Which of these calculations gives the answer 2022?

A.
 3×676

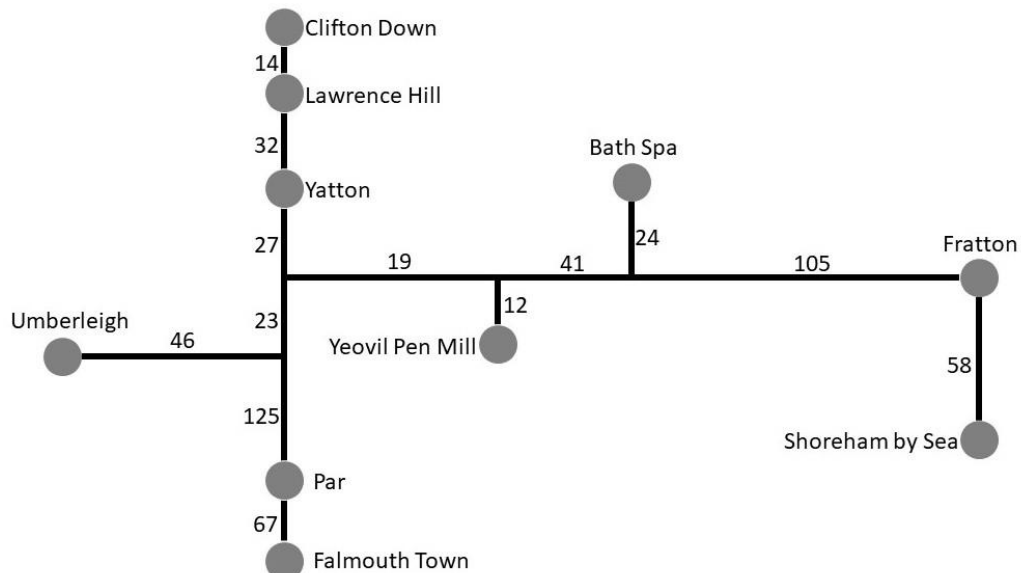
B.
 4×505

C.
 5×404

D.
 6×337

E.
 7×288

Q2. The diagram below shows some railway stations (dots) connected by track (lines). The numbers show the time, in minutes, which it takes for a train to travel along each section of track.



Assuming that the train does not stop, which of these journeys will take the longest time?

A.
Clifton Down
to Falmouth
Town

B.
Par to
Bath Spa

C.
Lawrence Hill
to Yeovil Pen
Mill

D.
Fratton to
Yatton

E.
Shoreham by
Sea to
Umberleigh

Q3. In April, Lauren bought 16 apples for £4.64.
In August, Lauren bought 14 apples for £4.76.
How much did the price of one apple go up by between April and August?

A.
4p

B.
5p

C.
6p

D.
7p

E.
12p

Q4. Draw the lines of symmetry on the letters below.
Which one is the odd one out?

A

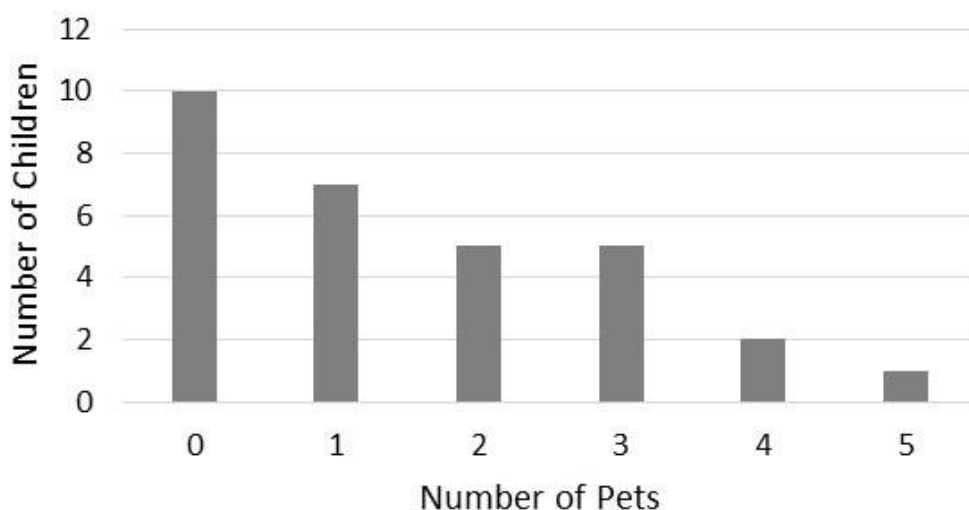
B

C

D

E

- Q5.** Rebecca draws a bar chart showing information about the number of pets each child in her class has.



How many children are in Rebecca's class?

- A.** 15 **B.** 30 **C.** 31 **D.** 32 **E.** 42
- Q6.** Cepaea snails can be pink, yellow or brown in colour. They can have anywhere from zero to five stripes. If they have stripes, then all of their stripes can be wide or all of their stripes can be narrow. How many different types of Cepaea snails are possible?
- A.** 11 **B.** 30 **C.** 33 **D.** 36 **E.** 38
- Q7.** When these decimals are placed in order, which one is in the middle?
- A.** 0.202 **B.** 0.22 **C.** 0.2022 **D.** 0.02 **E.** 0.2
- Q8.** Trudy is walking around a square. She starts by walking North along one of its edges. Then she turns 90° clockwise and walks along the next edge. She continues this until she has turned 110 more times. In which direction is Trudy now walking?
- A.** North **B.** South **C.** East **D.** West **E.** South East

Q9. The highest temperature ever recorded in the UK was 40.3°C .
The lowest temperature ever recorded in the UK was -27.2°C .
What is the difference between the highest and lowest temperatures ever recorded in the UK?

- A.** 13.1°C **B.** 17.1°C **C.** 58.5°C **D.** 67.1°C **E.** 67.5°C

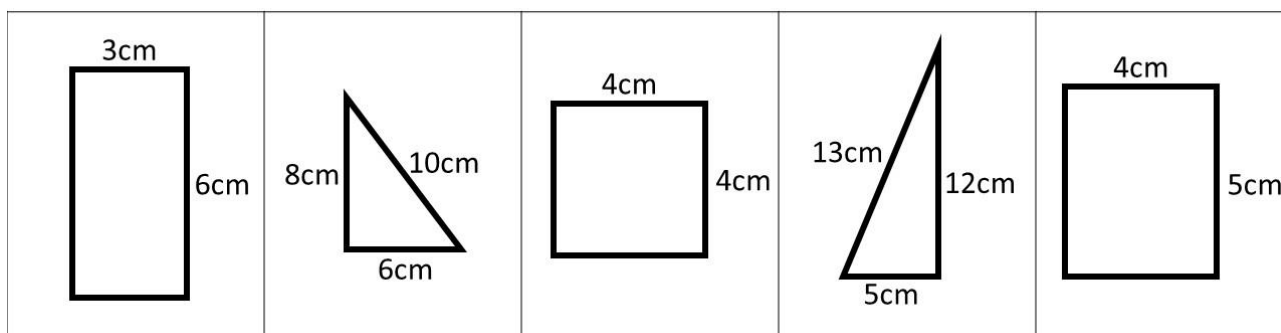
Q10. How many zeros are at the end of the answer to this calculation?
 $10 \times 11 \times 12 \times 13 \times 14 \times 15$

- A.** 1 **B.** 2 **C.** 3 **D.** 4 **E.** 5

Q11. Four of the following statements are true and one is false.
Which statement is false?

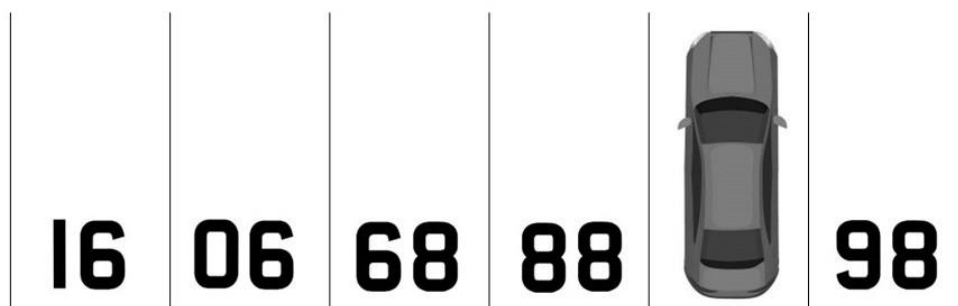
- A.** $10 - 3^2 = 1$
B. $12 - 8 + 2 = 6$
C. $8 + 2 \times 3 = 30$
D. $6 + 9 \div 3 = 9$
E. $(2 \times 3)^2 = 36$

Q12. An equable shape is a shape which has the same value for its area and its perimeter.
Which of these shapes is not equable?



- A.** **B.** **C.** **D.** **E.**

Q13. What is the number of the parking space covered by the car?



A.
06

B.
78

C.
83

D.
87

E.
90

Q14. In a Fibonacci sequence, each term is found by adding together the two previous terms. The sequence starts like this:

1 1 2 3 5 8 13 ...

Which of the numbers below will appear later in the sequence?

A.
4118

B.
4181

C.
4184

D.
4188

E.
4418

Q15. Which of these is the odd one out?

A.
15% of 140

B.
30% of 70

C.
35% of 60

D.
55% of 40

E.
70% of 30

Q16. I think of a number and call it my starting number.

I multiply my starting number by two.

I add three to the answer.

I double my new answer.

Next, I subtract 10.

Then I divide by two.

Finally, I subtract my starting number.

My answer is always:

A.
two less than
my starting
number

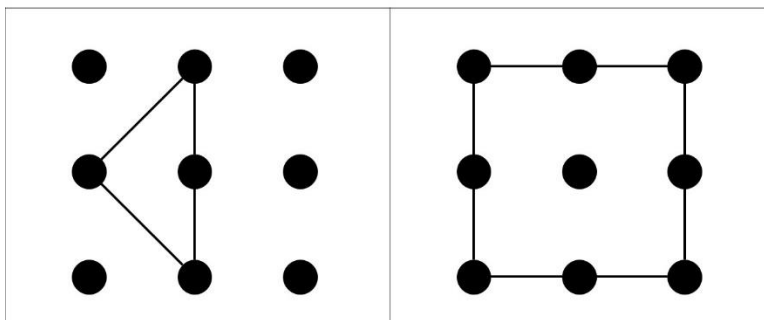
B.
4

C.
my starting
number

D.
5

E.
two more than
my starting
number

- Q17.** Peter is creating shapes by joining some of the points on a 3 by 3 grid with straight lines.
He can create a triangle (which has three sides) or a square (which has four sides):



Peter draws another shape in this way.

What is the largest possible number of sides which Peter's new shape could have?

- A.** 5 **B.** 6 **C.** 7 **D.** 8 **E.** 9

- Q18.** What is the value of $2\frac{1}{2} + 3\frac{1}{3} + 4\frac{1}{4}$?

- A.** $3\frac{5}{9}$ **B.** $9\frac{1}{3}$ **C.** $9\frac{1}{9}$ **D.** $10\frac{1}{10}$ **E.** $10\frac{1}{12}$

- Q19.** What fraction of the numbers from 1 to 100 are prime?

- A.** $\frac{11}{50}$ **B.** $\frac{23}{100}$ **C.** $\frac{6}{25}$ **D.** $\frac{1}{4}$ **E.** $\frac{13}{50}$

- Q20.** What is the acute angle between the hands of a clock at twenty past six?

- A.** 50° **B.** 55° **C.** 60° **D.** 65° **E.** 70°

**The following five questions are not multiple choice.
Write your answers on the answer sheet in the spaces provided.**

Q21. Sam completes a 10 by 10 multiplication grid:

X	1	2	3	4	5	6	7	8	9	10
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										

Sam then writes down all 100 answers in a long list in numerical order, from smallest to largest.

What is the 50th number in Sam's list?

Q22. Marek starts a sponsored walk at 6:52am and finishes at 4:38pm.
At what time is Marek half-way through his walk?

Q23. Tom is counting up in $\frac{1}{30}$'s.
He writes every number as a fraction in its simplest form.
He starts like this:

$$\frac{1}{30} \quad \frac{1}{15} \quad \frac{1}{10} \quad \frac{2}{15} \quad \frac{1}{6} \quad \dots$$

What fraction comes after $\frac{4}{5}$?

You must give your answer in its simplest form.

Q24. Calculate the sum of the numbers from 1000 to 1020:
 $1000 + 1001 + \dots + 1019 + 1020 = ?$

Q25. Follow the instructions below:

1. Write down a square number between 800 and 850
2. Subtract 57 from your number
3. Square root the answer
4. On the answer line, write down how many different factors this number has



Wellington School

Maths Challenge 2022

School Name _____

Pupils' Names _____

In the spaces provided, write the one letter you think answers each question.
One mark will be awarded for each correct answer.

1. | | 6. | | 11. | | 16. | |

2. | | 7. | | 12. | | 17. | |

3. | | 8. | | 13. | | 18. | |

4. | | 9. | | 14. | | 19. | |

5. | | 10. | | 15. | | 20. | |

For the questions 21 to 25, write your answers in the spaces provided.

21. | |

22. | |

23. | |

24. | |

25. | |

Maths Challenge 2022

Answers

Q1	D
Q2	E
Q3	B
Q4	A
Q5	B
Q6	C
Q7	A
Q8	D
Q9	E
Q10	B
Q11	C
Q12	E
Q13	D
Q14	B
Q15	D
Q16	A
Q17	C
Q18	E
Q19	D
Q20	E
Q21	24
Q22	11.45am
Q23	$\frac{5}{6}$ (must be a fraction in its simplest form)
Q24	21210
Q25	6