

The Wellington School Maths Challenge

30 November 2024



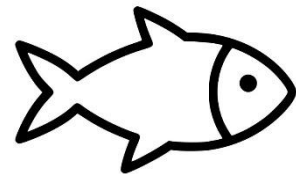
Q1. Which of these calculations gives the answer 2024?

- A.** $5 \times 16 \times 25$ **B.** $6 \times 14 \times 24$ **C.** $7 \times 13 \times 22$ **D.** $8 \times 11 \times 23$ **E.** $9 \times 11 \times 21$

Q2. How many times does the symbol 2 appear on this question booklet?

- A.** 91 **B.** 92 **C.** 93 **D.** 94 **E.** 95

Q3. In an aquarium, fish are kept in tanks.
Each tank can contain a maximum of 30 fish.
The aquarium has 372 fish.
How many tanks are needed?



- A.** 10 **B.** 11 **C.** 12 **D.** 13 **E.** 14

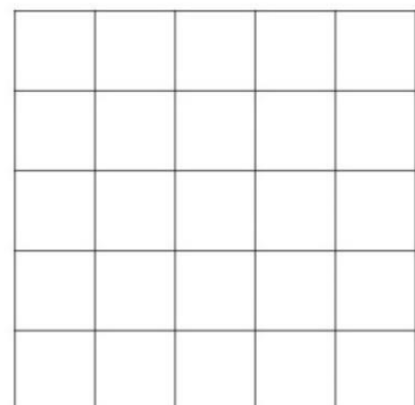
Q4. I start with the number eighty-four,
Divide by three and add six more,
I times by twelve and take away ten,
What's half of the number that I have then?

- A.** 51 **B.** 193 **C.** 198 **D.** 199 **E.** 209

Q5. Mike has a five-by-five grid of squares.

He wants to cover the grid using three,
smaller rectangles.

Which of the following sets of rectangles
cannot be used to cover the entire grid?



- A.** one-by-one
one-by-four
four-by-five
- B.** one-by-two
two-by-four
three-by-five
- C.** one-by-five
two-by-four
three-by-four
- D.** two-by-three
three-by-three
two-by-five
- E.** two-by-four
two-by-four
three-by-three

Q6. What is the answer to 5005×505 ?

- | | | | | |
|-----------|-----------|-----------|-----------|-----------|
| A. | B. | C. | D. | E. |
| 275275 | 2500025 | 2505025 | 2525525 | 2527525 |

Q7. Lydia reads one book every six days.
Stephie reads one book every eight days.
How many books will Stephie have read by the time Lydia has read twelve books?

- | | | | | |
|-----------|-----------|-----------|-----------|-----------|
| A. | B. | C. | D. | E. |
| four | six | nine | ten | sixteen |

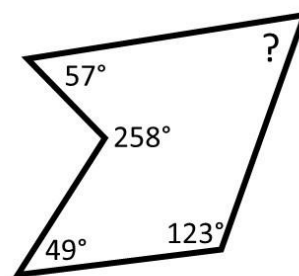
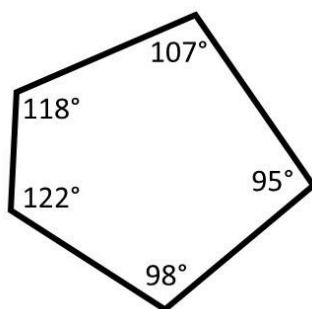
Q8. Tom rearranges the letters in the names of some shapes.
Which of the following phrases cannot be rearranged to get the name of a shape?

- | | | | | |
|-----------|------------|-------------------|-----------|-----------|
| A. | B. | C. | D. | E. |
| hog oxen | gentle car | alarm
galloper | large tin | open gnat |

Q9. When I was twelve, my brother was half my age.
Now my brother is ten, how old am I?

- | | | | | |
|-----------|-----------|-----------|-----------|-----------|
| A. | B. | C. | D. | E. |
| 5 | 14 | 16 | 18 | 20 |

Q10. The angles in a pentagon always add up to the same number.
Here are two pentagons.
What is the size of the missing angle?



- | | | | | |
|-----------|-----------|-----------|-----------|-----------|
| A. | B. | C. | D. | E. |
| 52° | 53° | 54° | 55° | 147° |

Q11. A sequence begins with the following numbers:

1 0.5 0.25 0.125 ...

What is the next number in the sequence?

- | | | | | |
|-----------|-----------|-----------|-----------|-----------|
| A. | B. | C. | D. | E. |
| 0.625 | 0.1625 | 0.1125 | 0.0625 | 0.062 |

Q12. Holly is playing a game where she spells out words using letter tiles. Each letter has a score, which is written as a number on the tile. Usually, the number of points Holly receives is given by adding up the scores of all of the letters in her word. However, Holly can also get bonus points where the scores of some letters are doubled or tripled before being added up.

In the following word, one letter's score is doubled and another letter's score is tripled before all of the scores are added up.

C	H	I	L	D
3	4	1	1	2

Holly gets 17 points for this word.
Which letter's score was doubled?

- | | | | | |
|-----------|-----------|-----------|-----------|-----------|
| A. | B. | C. | D. | E. |
| The "C" | The "H" | The "I" | The "L" | The "D" |

Q13. Trudy plots the following points on a coordinate grid:

(2 , 4) (6 , 10) (6 , 4)

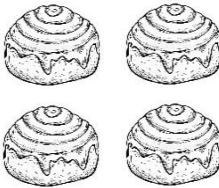
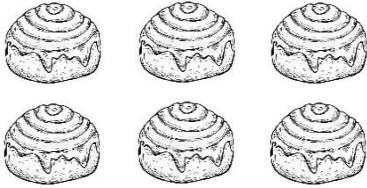
Trudy joins these points together with straight lines to form a shape.
What is the area of this shape?

- | | | | | |
|-----------|-----------|-----------|-----------|-----------|
| A. | B. | C. | D. | E. |
| 8 | 12 | 16 | 20 | 24 |

Q14. Peter has 50 sheep to sell.
32% of the sheep sell for £85 each.
56% of the sheep sell for £74 each.
The rest of the sheep sell for £58 each.
How much money did all of the sheep sell for in total?

- | | | | | |
|-----------|-----------|-----------|-----------|-----------|
| A. | B. | C. | D. | E. |
| £1683 | £3606 | £3780 | £4002 | £4360 |

Q15. Cakes are sold in differently sized packets:

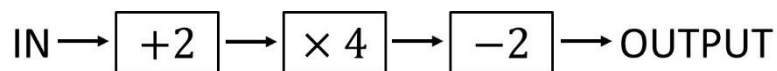
One cake	Four cakes	Six cakes
		
£1.50	£5.00	£7.80

Mr Battison wants to buy 15 cakes.

What is the smallest amount of money that Mr Battison would have to pay?

- A.** £19.30 **B.** £19.50 **C.** £20.00 **D.** £20.10 **E.** £22.50

Q16. Lauren has a number machine:



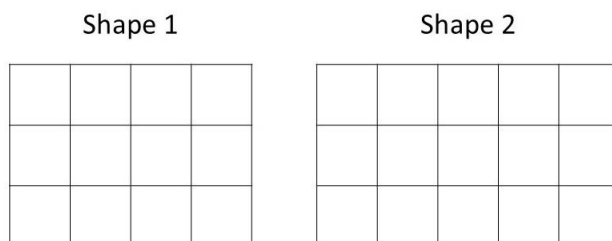
Lauren puts x into the number machine.

What is her output?

- A.** $x + 6$ **B.** $2x + 6$ **C.** $2x + 8$ **D.** $4x$ **E.** $4x + 6$

Q17. Nigel shades in $\frac{1}{4}$ of Shape 1.

Alex shades in part of Shape 2.



The two shapes are joined together.

$\frac{2}{9}$ of the new shape is shaded.

What fraction of Shape 2 did Alex originally shade?

- A.** $\frac{1}{5}$ **B.** $\frac{1}{4}$ **C.** $\frac{1}{3}$ **D.** $\frac{2}{5}$ **E.** $\frac{2}{3}$

- Q18.** If you take a number in the three times table and reverse its digits, you will always get another number in the three times table.
For example, 27 is in the three times table and so is 72.

This also works for some other times tables.

Which of the following times tables does this not work for?

- | | | | | |
|-----------|-----------|-----------|-----------|-----------|
| A. | B. | C. | D. | E. |
| 1 | 9 | 11 | 22 | 33 |

- Q19.** A triathlon is a race where each person must swim the first part of the course, cycle the second part and run the final part.
The table shows the times taken by five women to complete each part of the Olympic triathlon course. The times are given in minutes and seconds.

Name	Swim Time	Cycle Time	Run Time
Emma	22 mins 36 secs	59 mins 8 secs	33 mins 32 secs
Flora	22 mins 5 secs	59 mins 40 secs	34 mins 27 secs
Maya	22 mins 20 secs	59 mins 24 secs	35 mins 9 secs
Taylor	22 mins 43 secs	59 mins 1 sec	35 mins 27 secs
Zsanett	22 mins 34 secs	59 mins 11 secs	38 mins 39 secs

Who won the race?

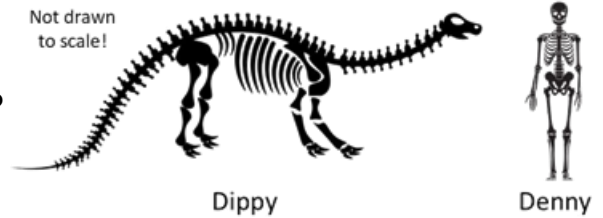
- | | | | | |
|-----------|-----------|-----------|-----------|-----------|
| A. | B. | C. | D. | E. |
| Emma | Flora | Maya | Taylor | Zsanett |

- Q20.** Nick starts counting down in whole numbers from 100: “100, 99, 98 ...”
At the same time, Sam starts counting up in prime numbers: “2, 3, 5 ...”
Nick and Sam both count at the same rate.
Which number do they both say at the same time?

- | | | | | |
|-----------|-----------|-----------|-----------|-----------|
| A. | B. | C. | D. | E. |
| 71 | 73 | 79 | 83 | 89 |

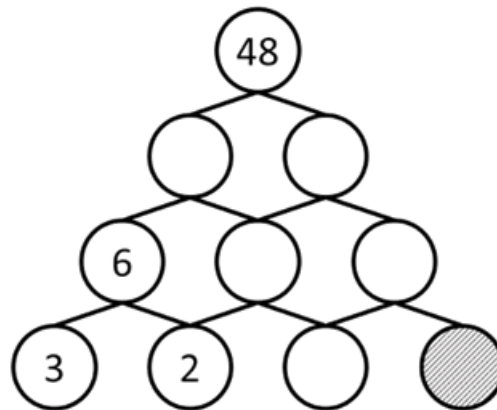
The following five questions are not multiple choice.
Write your answers on the answer sheet in the spaces provided.

- Q21.** Dippy is 150 million years old.
Denny is 90 thousand years old.
How much older is Dippy than Denny?
Give your answer in years.



- Q22.** Rebecca has a number.
She doubles the number.
Then she adds ten.
Her answer is six.
What number did Rebecca start with?

- Q23.** In the diagram below, each number is given by multiplying together the two numbers below it.
Each of the circles contains a positive whole number.



Find the number which goes in the shaded circle.

- Q24.** One pineapple weighs the same as five pears.
Two pears weigh the same as three oranges.
One orange weighs the same as twelve grapes.
How many grapes weigh the same as one pineapple?

- Q25.** Karen inserts the symbols $+$, $-$, $\times$ and $\div$ into the empty boxes below.
She uses each symbol exactly once.
Karen then works out the answer to the calculation.

5		4		3		2		1
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What is the largest possible answer that Karen can get?



Wellington School

Maths Challenge 2024

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

21. |_____|

22. |_____|

23. |_____|

24. |_____|

25. |_____|



Maths Challenge 2024

Answers

Q1	D
Q2	B
Q3	D
Q4	D
Q5	E
Q6	E
Q7	C
Q8	A
Q9	C
Q10	B
Q11	D
Q12	B
Q13	B
Q14	C
Q15	A
Q16	E
Q17	A
Q18	D
Q19	A
Q20	C
Q21	149,910,000 or 149 million 910 thousand
Q22	-2 or minus two or negative two
Q23	2
Q24	90
Q25	21