

# The Wellington School Maths Challenge

30 November 2019



**Q1.** When placed in order, which of these answers is in the middle?

**A.**  
 $3 \times 673$

**B.**  
 $4 \times 505$

**C.**  
 $5 \times 403$

**D.**  
 $6 \times 337$

**E.**  
 $7 \times 288$

**Q2.** Apples cost 43p and bananas cost 17p.  
Victoria wants to buy twelve pieces of fruit.  
How much more expensive would it be to buy twelve apples than twelve bananas?

**A.**  
£3.02

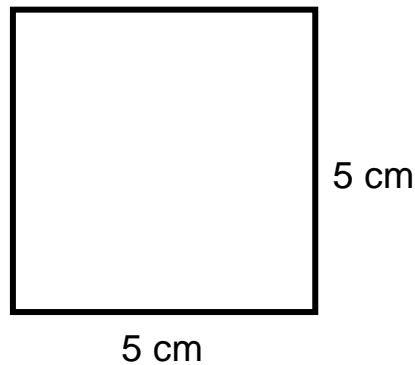
**B.**  
£3.12

**C.**  
£3.22

**D.**  
£4.08

**E.**  
£4.82

**Q3.**



Alastair calculates the area and the perimeter of the square above.  
He also works out the number of lines of symmetry that it has.  
Alastair adds together his three answers.  
What value does he get?

**A.**  
34

**B.**  
37

**C.**  
39

**D.**  
47

**E.**  
49

**Q4.** Which of these numbers is a multiple of 37?

**A.**  
333

**B.**  
337

**C.**  
373

**D.**  
733

**E.**  
737

**Q5.** Marek has a bag containing lots of 2p, 5p and 10p coins.  
In how many different ways can he make 20p from his coins?

**A.**  
5

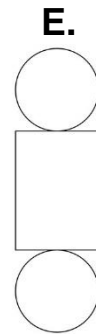
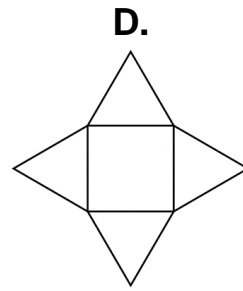
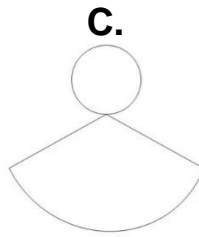
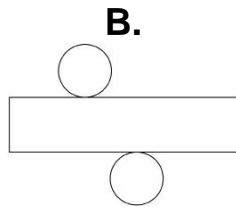
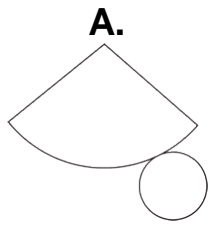
**B.**  
6

**C.**  
7

**D.**  
8

**E.**  
9

**Q6.** Which of these is the net of a cone?



**Q7.** Sue has £  $x$  in her bank account. She spends £5 and then earns enough money to double the amount of money in her account. How much money, in pounds, does Sue have now?

**A.**  
 $x - 10$

**B.**  
 $2x - 2\frac{1}{2}$

**C.**  
 $2x - 5$

**D.**  
 $2x + 10$

**E.**  
 $2x - 10$

**Q8.** The average November temperature in Oymyakon, Russia, is  $-35.2^{\circ}\text{C}$ . The average November temperature in Wellington, Somerset is  $8.1^{\circ}\text{C}$ . What is the difference between the average November temperatures in Oymyakon and Wellington?

**A.**  
 $27.1^{\circ}\text{C}$

**B.**  
 $33.1^{\circ}\text{C}$

**C.**  
 $42.3^{\circ}\text{C}$

**D.**  
 $43.3^{\circ}\text{C}$

**E.**  
 $45.8^{\circ}\text{C}$

**Q9.** Andy records the ages, in years, of five dogs. They are: 1, 2, 5, 5 & 6. Andy then calculates the mode, median and range of these numbers. Andy adds the age of another dog to the list. He notices that the mode, median and range all stay the same. What was the age of the sixth dog which Andy added to the list?

**A.**  
0

**B.**  
1

**C.**  
2

**D.**  
4

**E.**  
5

**Q10.** What is the value of  $4^2 - 6 \div 2 + 5 \times (7 - 3)$  ?

**A.**  
-7

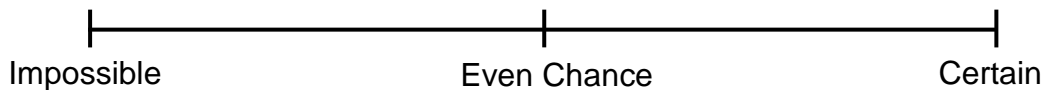
**B.**  
25

**C.**  
33

**D.**  
40

**E.**  
67

**Q11.** Tom puts some events on a probability line:



Which one is in the middle of the list?

- |  |   |  |   |  |
|--|---|--|---|--|
| <b>A.</b><br>Flipping a coin and getting heads | <b>B.</b><br>Rolling a fair dice and getting an even number | <b>C.</b><br>Picking an answer to this question at random and getting it right | <b>D.</b><br>Flipping a coin and it landing on the edge | <b>E.</b><br>Rolling a fair dice and getting a six |
|--|---|--|---|--|

**Q12.** Annie has 18 sheep. Each sheep has one, two or three lambs. If  $\frac{2}{3}$  of the sheep have two lambs and twice as many sheep have one lamb as have three lambs, how many lambs are there?

- |                 |                 |                 |                 |                 |
|-----------------|-----------------|-----------------|-----------------|-----------------|
| <b>A.</b><br>28 | <b>B.</b><br>30 | <b>C.</b><br>32 | <b>D.</b><br>34 | <b>E.</b><br>36 |
|-----------------|-----------------|-----------------|-----------------|-----------------|

**Q13.** Today's date is 30/11/19. It is special because the day is equal to the sum of the month and the year. How many more such days will there be in the next two years?

- |                 |                 |                 |                 |                 |
|-----------------|-----------------|-----------------|-----------------|-----------------|
| <b>A.</b><br>20 | <b>B.</b><br>21 | <b>C.</b><br>22 | <b>D.</b><br>23 | <b>E.</b><br>24 |
|-----------------|-----------------|-----------------|-----------------|-----------------|

**Q14.** A parallelogram is a four-sided shape with two pairs of parallel sides. How many of the following shapes are a type of parallelogram?

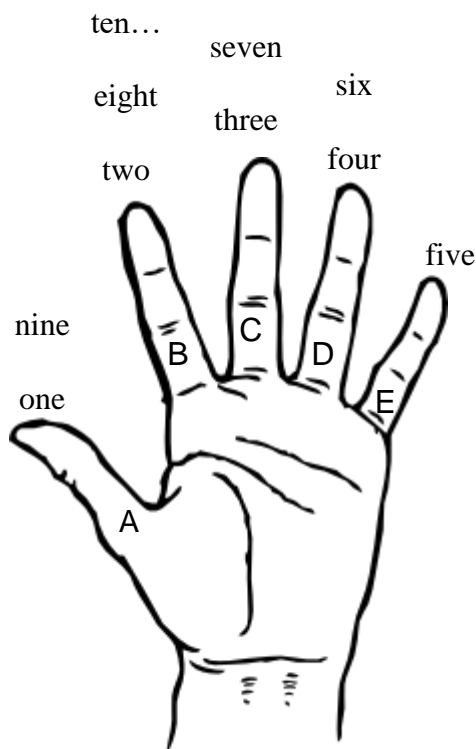
- |                |                |                |                |                |
|----------------|----------------|----------------|----------------|----------------|
| Kite           | Square         | Rectangle      | Rhombus        | Trapezium      |
| <b>A.</b><br>1 | <b>B.</b><br>2 | <b>C.</b><br>3 | <b>D.</b><br>4 | <b>E.</b><br>5 |

**Q15.** Laura buys 100 bottles of water, each of which contains 500ml of water. How much water does Laura buy, in litres?

- A.** 0.5 litres      **B.** 5 litres      **C.** 50 litres      **D.** 500 litres      **E.** 5000 litres

**Q16.** Mr du Toit counts on the fingers of his left hand like this. Each time he reaches his little finger or thumb he keeps counting in the other direction.

Which finger will he never point to while saying a prime number?



**Q17.** Two shops are selling the same coat. In shop A, the coat normally costs £60 and in shop B, it normally costs £75.

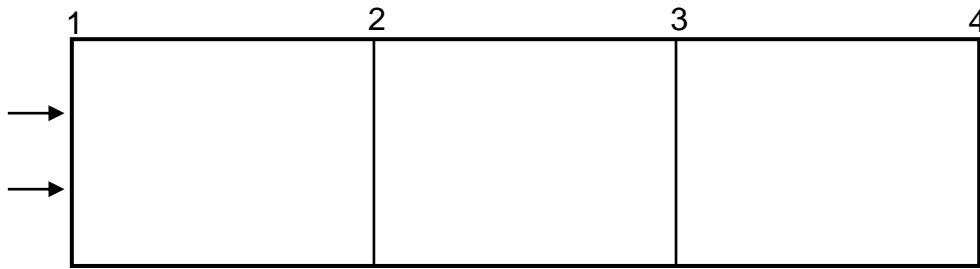
Shop A is having a sale in which all items have 10% off.

Shop B is having a sale where all items have 35% off.

How much cheaper is the coat at shop B than at shop A?

- A.** £4.25      **B.** £4.75      **C.** £5.25      **D.** £5.75      **E.** £6.75

- Q18.** Rowan swims at twice the speed of Holly.  
Rowan and Holly both start swimming from position 1 at the same time and swim in straight lines forwards and backwards across the pool.



At which positions do they pass each other?

- A.** only at 1      **B.** at 1 and 3      **C.** at 2 and 3      **D.** at 2 and 4      **E.** only at 4
- Q19.** Peter and Sam each have £100. Peter gives  $\frac{1}{2}$  of his money to Sam, then Sam gives  $\frac{1}{3}$  of the money she now has to Peter. Then Peter gives  $\frac{1}{4}$  of his money to Sam, then Sam gives  $\frac{1}{5}$  of her money to Peter. They continue in this way until Peter has just given Sam  $\frac{1}{10}$  of his money.

How much money does Sam have now?

- A.** £80      **B.** £90      **C.** £100      **D.** £110      **E.** £120
- Q20.** To work out the sum score for a word we add the positions of each letter in the alphabet. For example:

$$\begin{aligned} \text{TWO} &= 20 + 23 + 15 \\ &= 58 \end{aligned}$$

Which of these numbers, when written in words, is equal to its sum score?

- A.** 215      **B.** 259      **C.** 282      **D.** 284      **E.** 293

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

**Q21.** Flora turned four on 04/04/2004. Sid turned six on 06/06/2006.  
What is the difference between their ages, in days?

**Q22.** How many minutes are there in one year (not a leap year)?

**Q23.** Trudy has a broken clock. It has an hour hand but the minute hand is missing.



What time is it?

**Q24.** Dan and Tim each think of a two digit number. Dan's number is two more than a multiple of seven and three more than a multiple of eight. Tim's number is two less than a multiple of seven and three less than a multiple of eight.  
What is the difference between Dan's number and Tim's number?

**Q25.** The number 30 is abundant because the sum of its factors is greater than twice itself:

$$1 + 30 + 2 + 15 + 3 + 10 + 5 + 6 = 72$$

$$30 \times 2 = 60$$

$$72 > 60$$

Write down the four numbers less than 30 which are abundant.



# Wellington School

## Maths Challenge 2019

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 last five questions write your answers in the spaces provided.

21. |\_\_\_\_\_|

22. |\_\_\_\_\_|

23. |\_\_\_\_\_|

24. |\_\_\_\_\_|

25. |\_\_\_\_\_| , |\_\_\_\_\_| , |\_\_\_\_\_| , |\_\_\_\_\_|



## Maths Challenge 2019

### Answers

Q1	A
Q2	B
Q3	E
Q4	A
Q5	B
Q6	A
Q7	E
Q8	D
Q9	E
Q10	C
Q11	C
Q12	D
Q13	C
Q14	C
Q15	C
Q16	D
Q17	C
Q18	B
Q19	D
Q20	B
Q21	63
Q22	525600
Q23	5:12 or 12 minutes past 5 o.e.
Q24	10
Q25	12, 18, 20, 24 – any order (0.25 marks for each)