

# The Wellington School Maths Challenge

27 November 2020



**Q1.** Which of these calculations does not equal 2020?

**A.**  
 $20 \times 101$

**B.**  
 $10 \times 202$

**C.**  
 $5 \times 404$

**D.**  
 $4 \times 505$

**E.**  
 $3 \times 606$

**Q2.** Marek works at his local shop. He gets paid £9.50 for every hour that he works. Last weekend, he worked for  $6\frac{1}{2}$  hours on Saturday and 5 hours on Sunday.  
How much money was Marek paid?

**A.**  
£118.75

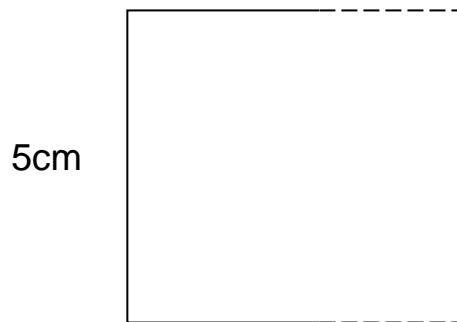
**B.**  
£109.25

**C.**  
£108.75

**D.**  
£104.50

**E.**  
£99.25

**Q3.** This rectangle has an area of  $30\text{cm}^2$ . What is its perimeter?



**A.**  
10cm

**B.**  
11cm

**C.**  
20cm

**D.**  
22cm

**E.**  
24cm

**Q4.** A group of friends are playing darts. Zoe throws her three darts and hits treble 9, double 12 and single 15. She then works out her score:

$$3 \times 9 + 2 \times 12 + 15 = 66$$

Which of her five friends gets the highest score?

**A.** Alex: double 13, double 6 & double 18

**B.** Brendan: treble 4, treble 8 & double 9

**C.** Ciara: double 18, single 20 & single 17

**D.** Dennis: treble 14, double 1 & single 15

**E.** Ellen: double 16, double 5 & single 14

**Q5.** Tom thinks of a sequence and writes down some of its numbers:

4 , \_\_\_ , 16 , \_\_\_ , \_\_\_ , 34 ...

What is the 20<sup>th</sup> number in Tom's sequence?

- A.** 116      **B.** 118      **C.** 120      **D.** 122      **E.** 124

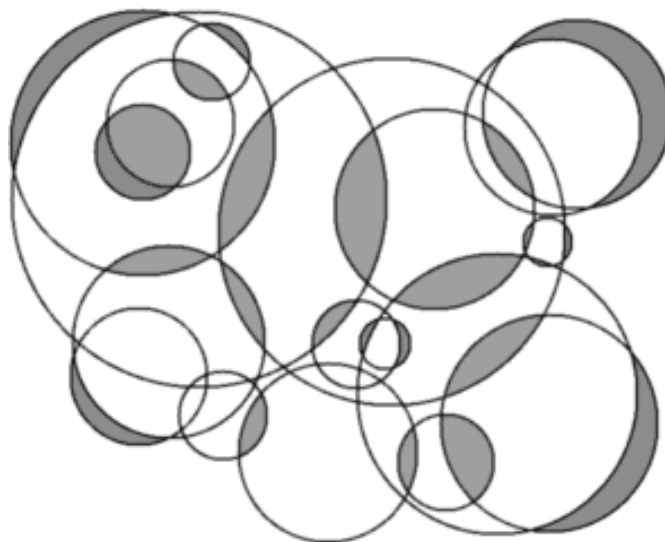
**Q6.** Andy has  $x$  sweets, Sue has twice as many sweets as Andy and Vics has four more sweets than Andy.  
How many sweets do Andy, Sue and Vics have altogether?

- A.**  $x + 6$       **B.**  $2x + 6$       **C.**  $3x + 4$       **D.**  $4x + 4$       **E.**  $8x$

**Q7.** To make an orange squash drink, I mix 20ml of orange concentrate with 100ml of water.  
How much orange squash drink can I make if I have 1 litre of orange concentrate and unlimited water?

- A.** 2 litres      **B.** 3 litres      **C.** 4 litres      **D.** 5 litres      **E.** 6 litres

**Q8.** How many circles are there in this picture?



- A.** 17      **B.** 18      **C.** 19      **D.** 20      **E.** 21

**Q9.** Sam arrives at a bus stop in Taunton at 11.45am.  
 Her bus arrives 13 minutes later.  
 The bus drives from Taunton to Tiverton, stopping twice on the way.  
 It takes 19 minutes for the bus to get from Taunton to Wellington,  
 23 minutes to get from Wellington to Uffculme  
 and 25 minutes to get from Uffculme to Tiverton.  
 Each time the bus stops, it stops for 4 minutes.  
 At what time does Sam arrive in Tiverton?

- A.** 12.37pm      **B.** 1.09pm      **C.** 1.13pm      **D.** 1.17pm      **E.** 1.21pm

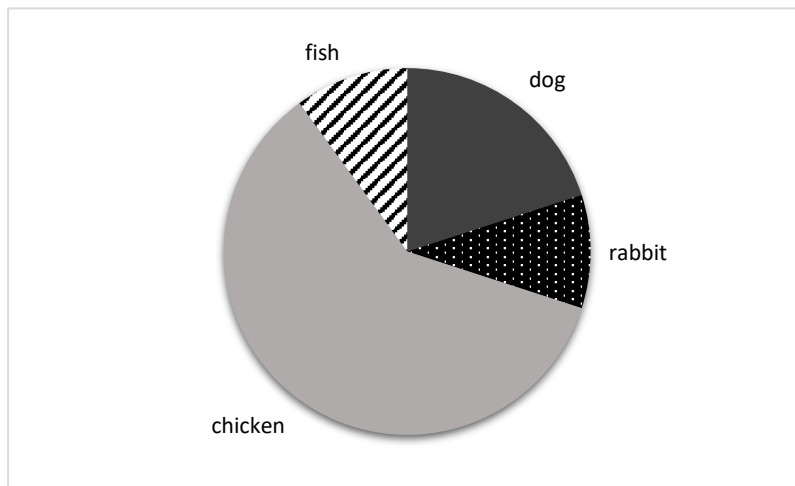
**Q10.** I write down the numbers from 1 to 10 in words.  
 How many different letters have I used?

- A.** 11      **B.** 12      **C.** 13      **D.** 14      **E.** 15

**Q11.** What is 10% of 20% of 30% of 100?

- A.** 0.15      **B.** 0.2      **C.** 0.6      **D.** 40      **E.** 50.4

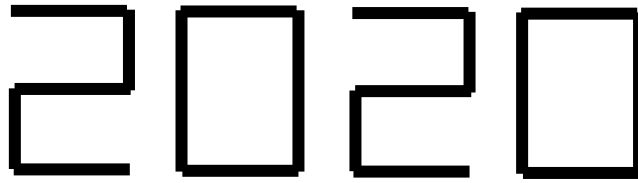
**Q12.** Peter has ten pets. The species' of Peter's pets are shown in this pie chart:



How many chickens does Peter have?

- A.** 2      **B.** 4      **C.** 5      **D.** 6      **E.** 8

**Q13.** Trudy writes the number 2020 in digits like this:



Trudy reflects this image in a vertical line and gets a new number.  
She then reflects the original image in a horizontal line to get a different new number.

What is the difference between Trudy's two new numbers?

- |           |           |           |           |           |
|-----------|-----------|-----------|-----------|-----------|
| <b>A.</b> | <b>B.</b> | <b>C.</b> | <b>D.</b> | <b>E.</b> |
| 5858      | 4848      | 4545      | 1818      | 1515      |

**Q14.** Which of these statements is not true?

- A.**  $3^2 - 2^3 = 1^2$
- B.**  $5^3 - 11^2 = 2^2$
- C.**  $6^2 - 3^3 = 3^2$
- D.**  $7^2 - 2^5 = 4^2$
- E.**  $13^2 - 12^2 = 5^2$

**Q15.** Marek writes down the six times table up to sixty but misses out one number.

He says, "When you add up the digits of a number in the six times table, you always get the same three answers."

Which number in the six times table did Marek miss out of his list?

- |           |           |           |           |           |
|-----------|-----------|-----------|-----------|-----------|
| <b>A.</b> | <b>B.</b> | <b>C.</b> | <b>D.</b> | <b>E.</b> |
| 12        | 35        | 48        | 54        | 56        |

**Q16.** Tom has a bag containing twelve counters. Each counter is red, blue or yellow. Tom picks a counter out of the bag at random.

The probability that the counter is red is  $\frac{1}{4}$ .

The probability that the counter is blue is  $\frac{2}{3}$ .

How many yellow counters are in the bag?

- |           |           |           |           |           |
|-----------|-----------|-----------|-----------|-----------|
| <b>A.</b> | <b>B.</b> | <b>C.</b> | <b>D.</b> | <b>E.</b> |
| 1         | 2         | 3         | 4         | 5         |

**Q17.** A baker is cutting loaves of bread into slices. He has 15 loaves of bread and makes a total of 210 cuts.  
How many slices of bread does the baker have in total?

- A.** 90                      **B.** 210                      **C.** 211                      **D.** 220                      **E.** 225

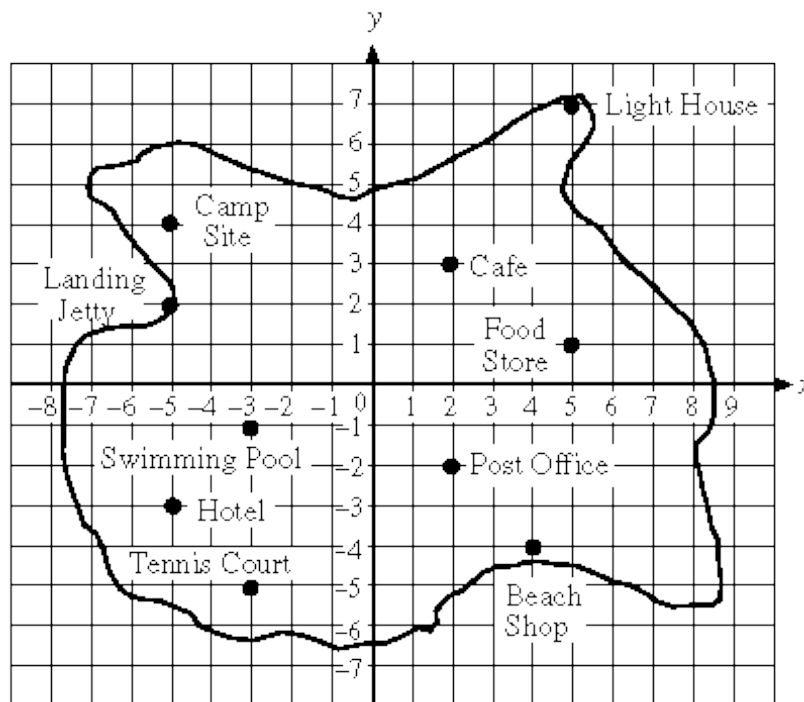
**Q18.** Sam has five coins which have a total value of sixty four pence.  
How many possible combinations of coins could Sam have?

- A.** 2                      **B.** 3                      **C.** 4                      **D.** 5                      **E.** 6

**Q19.** Which of these numbers is closest to one?

- A.**  $\frac{19}{20}$                       **B.** 1.08                      **C.**  $\frac{11}{10}$                       **D.** 1.4                      **E.** 0.9

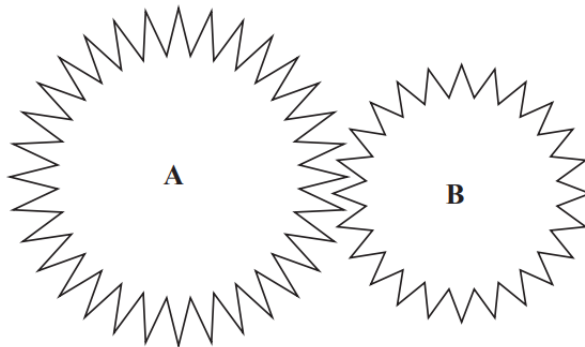
**Q20.** Captain Eugene, the fearsome pirate, has buried his treasure on Wellington Island.  
He buries it at a point which is the same distance from all three of the following places: the Light House, the Food Store and the Hotel.  
What are the coordinates of the point where the treasure is buried?



- A.** (-2, 4)                      **B.** (0, 4)                      **C.** (-2, 2)                      **D.** (0, 2)                      **E.** (4, -1)

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

- Q21.** Every child at the Maths Challenge receives a Puzzle Cube. Each Puzzle Cube is made up of six puzzle pieces. There are four children in each Math Challenge Team and 63 teams are taking part.  
How many puzzle pieces are there altogether?
- Q22.** Peter thinks of number. He doubles it, takes away two, divides by four, then adds five. He gets the same number which he started with.  
What was Peter's original number?
- Q23.** Trudy has four balloons, which are different colours: blue, green, red and yellow. She takes them out of the packet one at a time.  
In how many different orders can she do this?
- Q24.** The diagram shows two cogs, labelled A and B:



Cog A has 32 teeth and cog B has 24 teeth.  
If cog A is turned through three full rotations, how many times will cog B have rotated?

- Q25.** Lydia is collecting square numbers which do not end with a zero. She has already found: 36, 121, 3249 and 16384. Now she wants to find a square number which is greater than one million.  
Write down any square number which is greater than one million and does not end with a zero.



# Wellington School

## Maths Challenge 2020

School Name \_\_\_\_\_

Pupils' Names \_\_\_\_\_  
(Please write your  
first and last 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 2020**  
**Answers**

Q1	E
Q2	B
Q3	D
Q4	A
Q5	B
Q6	D
Q7	E
Q8	C
Q9	C
Q10	D
Q11	C
Q12	D
Q13	C
Q14	D
Q15	C
Q16	A
Q17	E
Q18	B
Q19	A
Q20	A
Q21	1512
Q22	9
Q23	24
Q24	4
Q25	any square number $>1,000,000$ not ending in a zero