

The Wellington School Maths Challenge

25 November 2017



Q1. What is $2 \times 4 \times 6 \times 8 \times 10$?

A.
240

B.
3360

C.
3840

D.
4040

E.
246810

Q2. Trudy buys 8 pens for 18p each and 5 pencils for 46p each. How much change does Trudy get from £5?

A.
£0.56

B.
£1.26

C.
£2.74

D.
£3.71

E.
£3.74

Q3. In a maths test, question one is worth 1 mark, question two is worth 2 marks, question three is worth 3 marks and so on. The test contains 15 questions. Andy gets all of the questions correct except for question eight. What is his total score?

A.
112

B.
114

C.
116

D.
118

E.
120

Q4. In a game of Quidditch, 10 points are awarded for each goal and a bonus 150 points is given to whichever team catches the snitch. Hufflepuff beats Gryffindor at Quidditch by 320 points to 60. How many goals were scored in this match in total?

A.
23

B.
26

C.
29

D.
38

E.
230



Q5. Sue says that the winter months are December, January and February; spring is made up of March, April and May; summer is June, July and August and autumn is September, October and November. Which season contains the most days?

- A.** Winter **B.** Spring **C.** Summer **D.** Autumn **E.** It's a tie

Q6. Which of these coordinates are not in line?

- A.** $(-3, 7)$ **B.** $(-1, 3)$ **C.** $(0, 1)$ **D.** $(2, -3)$ **E.** $(4, -9)$

Q7. Common British ladybirds have 2, 7 or 15 spots. Tom counts the total number of spots on all of the ladybirds on a bush. His total is 33. What is the least number of ladybirds there could be on the bush?

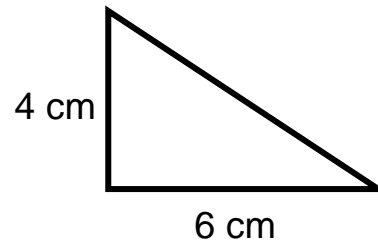
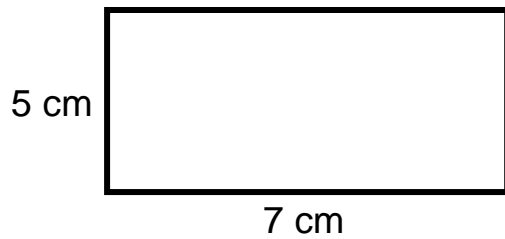
- A.** 3 **B.** 4 **C.** 5 **D.** 6 **E.** 7

Q8. What is the angle between West and South East on a compass?

- A.** 180° **B.** 225° **C.** 270° **D.** 315° **E.** 360°



Q9. What is the difference between the area of the rectangle and the area of the triangle below?



- A.** 11 cm² **B.** 13 cm² **C.** 21 cm² **D.** 23 cm² **E.** 47 cm²

Q10. At a school, all of the classes have the same number of pupils in them. There are 19 pupils in each class and 266 pupils at the school. How many classes are there?

- A.** 17 **B.** 16 **C.** 15 **D.** 14 **E.** 13

Q11. Today is the 25th day of the month and so we call it a Square Day because 25 is a square number. In total, how many Square Days are there in a year?

- A.** 48 **B.** 58 **C.** 60 **D.** 62 **E.** 72

Q12. Henry has x cakes. He gives four of them to Rowan. Then he gives half of what he has left to Holly. How many cakes does Henry have now?

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

Q13. The first three terms of a sequence are 2, 5 and 8.
What is the one hundredth term of the sequence?

A.
298

B.
299

C.
300

D.
301

E.
302

Q14. Stephe has 36 sausage rolls. On Monday, she eats $\frac{1}{4}$ of them.

On Tuesday, she eats $\frac{1}{3}$ of the rest. On Wednesday, she eats $\frac{1}{2}$ of the remaining sausage rolls.

What fraction of the original amount are left uneaten?

A.
 $\frac{1}{2}$

B.
 $\frac{1}{3}$

C.
 $\frac{1}{4}$

D.
 $\frac{1}{5}$

E.
 $\frac{1}{6}$

Q15. What is the value of $15 - 12 + (9 - 6)^2 \times 3$?

A.
-24

B.
-15

C.
21

D.
30

E.
36

Q16. On Sunday, Lydia sleeps for 7 hours and 10 minutes. On Monday, she sleeps for 7 hours and 30 minutes. Every night she sleeps for 20 minutes longer than the night before.

What is Lydia's total sleeping time for the week?

A.
54hrs 30mins

B.
56hrs 10mins

C.
56hrs 30mins

D.
57hrs 10mins

E.
66hrs 30mins

Q17. Victoria has five numbers. Their mean is 0, their median is 0 and their mode is 0. Two of the numbers are -3 and -4 . What is the range of Victoria's numbers?

- A.** 0 **B.** 4 **C.** 7 **D.** 10 **E.** 11

Q18. The value of $\sqrt{40}$ is:

- A.** between 6.3 and 6.4 **B.** between 6.4 and 6.5 **C.** between 6.5 and 6.6 **D.** between 6.6 and 6.7 **E.** 20

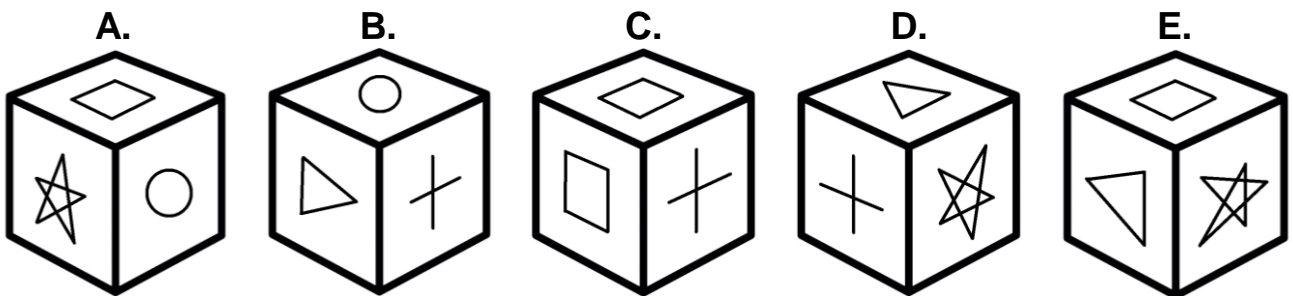
Q19. To work out the product score for a word we multiply the positions of each letter in the alphabet. For example:

$$\begin{aligned} \text{BEECH} &= 2 \times 5 \times 5 \times 3 \times 8 \\ &= 1200 \end{aligned}$$

Here are the names of five more trees. Which has the smallest product score?

- A.** APPLE **B.** BIRCH **C.** HAZEL **D.** MAPLE **E.** PINE

Q20. Here are five pictures of cubes. Which one is not a picture of the same cube as the others?



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

Q21. Sam has a pile of each type of British coin from 1p to £2.
She has one 1p coin, two 2p coins, four 5p coins, eight 10p coins and so on. The quantity doubles each time.
How much money does Sam have in total?

Q22. Binary is a way of writing numbers using just the digits 0 and 1.
Using binary, the number 25 is written 11001 because:

...	128	64	32	16	8	4	2	1
				1	1	0	0	1

16 + 8 + 1 = 25

How would you write the number 165 using binary?

Q23. 121 is a palindromic square number because it is a square number which reads the same forwards and backwards.
What is the next palindromic square number?

Q24. Marek thinks of a number between 1 and 100. It is a prime number and is five more than a square number. What is Marek's number?

Q25. I've got a brand new combine harvester and 20 acres of crops to harvest. My friend has 115% more acres than me.
How many acres does my friend have?



Wellington School

Maths Challenge 2017

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 2017

Answers

Q1	C
Q2	B
Q3	A
Q4	A
Q5	E
Q6	E
Q7	C
Q8	B
Q9	D
Q10	D
Q11	C
Q12	B
Q13	B
Q14	C
Q15	D
Q16	D
Q17	E
Q18	A
Q19	B
Q20	D
Q21	£340.25
Q22	10100101
Q23	484
Q24	41
Q25	43