

The Wellington School Maths Challenge

29 November 2014



Q1. Which of these calculations does not equal 2014?

A.
 1×2014

B.
 2×1007

C.
 19×106

D.
 26×74

E.
 38×53

Q2. When these values are placed in order, which is in the middle?

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

B.
0.8

C.
 $\frac{3}{10}$

D.
 $\frac{2}{3}$

E.
0.75

Q3. What is the sum of:

- The number of sides that an octagon has
- The number of millimetres in 4 centimetres
- The number of lines of reflection of this shape:
- The order of rotational symmetry of this shape:



A.
52

B.
54

C.
56

D.
412

E.
414

Q4. Mr Price fires 12 more arrows at the target. Five hit the centre black circle, four land in the inner white ring and the rest hit the outer black ring. What is his total score?



A.
104

B.
108

C.
111

D.
115

E.
125

Q5. Which of these is a square number?

Hint: write down all the square numbers that you know, you may notice something.

- | | | | | |
|-----------|-----------|-----------|-----------|-----------|
| A. | B. | C. | D. | E. |
| 201601 | 201602 | 201603 | 201607 | 201608 |

Q6. Geoff travels 3km south, 6km west and then 3km south.
He wants to return directly to his starting point.
In which direction should he travel?

- | | | | | |
|-----------|------------|------------|------------|------------|
| A. | B. | C. | D. | E. |
| North | North West | North East | South East | South West |

Q7. Tom is making anagrams from numbers between 1 and 20.
He uses the letters in the number 10 to make the word *net*.
Which word or phrase can he not make?

- | | | | | |
|--------------|------------------|-----------------|--------------|------------------|
| A. | B. | C. | D. | E. |
| <i>evens</i> | <i>tent hire</i> | <i>not free</i> | <i>there</i> | <i>enter ufo</i> |

Q8. Here are some of the results from a quiz:

<u>Girls</u>		<u>Boys</u>	
Ashna	78	Boris	48
Chloé	39	Daniel	63
Eleanor	54	Freddie	57

Norman calculates the boys' total score.

Victoria works out how many the girls scored altogether.

Sam then finds the difference between Norman and Victoria's results.

What is Sam's answer?

- | | | | | |
|-----------|-----------|-----------|-----------|-----------|
| A. | B. | C. | D. | E. |
| 2 | 3 | 4 | 5 | 339 |

Q9. There is a blue square and a red square.
 The blue square has an area of 16cm^2 .
 The perimeter of the red square is twice the perimeter of the blue square.
 What is the area of the red square?

- A.** 64cm^2 **B.** 48cm^2 **C.** 32cm^2 **D.** 8cm^2 **E.** 4cm^2

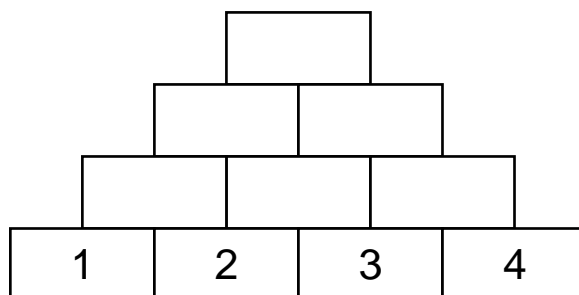
Q10. One of the answers to these questions is different.
 Which one is the odd one out?

- A.** 35% of 15 **B.** 15% of 35 **C.** 5% of 105 **D.** 25% of 21 **E.** 20% of 25

Q11. Ann, Ben, Cat, Des, Eve and Fin sit in order, in a circle, and play pass the parcel. Ann has the parcel to begin with.
 There are seven layers of wrapping paper.
 Each time the music plays, the parcel is passed eleven times.
 Who wins the prize?

- A.** Ben **B.** Cat **C.** Des **D.** Eve **E.** Fin

Q12. In this wall each brick is the product of the two bricks beneath it.
 What number will fill the top brick?



- A.** 108 **B.** 216 **C.** 864 **D.** 1008 **E.** 1296

Q13. A van can tow a maximum mass of 2 tonnes.
What is the maximum number of calves weighing 180kg each which can be carried in a 400kg trailer?

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

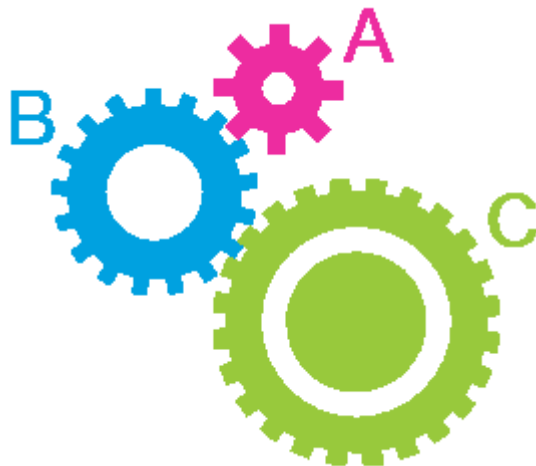
Q14. In this year's World Cup, a total of 197 goals were scored in 64 matches. What was the mean number of goals per match, correct to one decimal place?

- A.** 3.1 **B.** 3.2 **C.** 3.3 **D.** 3.4 **E.** 3.5

Q15. I start with an expression. I subtract three and multiply by two.
The answer is $4x - 4$. What was the original expression?

- A.** $2x + 1$ **B.** $2x - 1$ **C.** $2x - 5$ **D.** $4x - 5$ **E.** $8x - 14$

Q16. Wheel C turns three times clockwise.



How much does wheel A turn?

- A.** Three times clockwise **B.** Three times anticlockwise **C.** Once clockwise **D.** Nine times clockwise **E.** Nine times anticlockwise

Q17. How many of these statements are true?

- $4 - 3 + 2 = 3$
- $4 + 3 \times 2 = 10$
- $4 \times 3 - 2 = 10$
- $(4 - 3) \times 2 = 2$

A.
none

B.
one

C.
two

D.
three

E.
all four

Q18. A CD contains five songs. The lengths of time that each of the songs last are:

	3 min 47 sec	2 min 55 sec
4 min 38 sec	3 min 51 sec	2 min 39 sec

What is the total playing time for the CD?

A. 16 min 30 sec **B.** 16 min 50 sec **C.** 17 min 30 sec **D.** 17 min 50 sec **E.** 18 min 30 sec

Q19. It takes 6 fundraisers, 3 hours to wash 90 cars.
How long will it take 4 fundraisers to wash 80 cars?

A.
2 hours

B.
3 hours

C.
4 hours

D.
 $4\frac{1}{2}$ hours

E.
5 hours

Q20. To work out the product score for a word we multiply the positions of each letter in the alphabet. For example:

$$\begin{aligned} \text{ENYA} &= 5 \times 14 \times 25 \times 1 \\ &= 1750 \end{aligned}$$

Here are five more music artists who have had number one hits.
Which has the largest product score?

A.
ABBA

B.
BLUR

C.
BROS

D.
CHER

E.
TPAU

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

Q21. Which three prime numbers multiply together to equal 1001?

Q22. A 10p coin is 2mm thick.
Andy has a pile of 10p coins which is 18.4cm tall.
What is the value of the money in Andy's pile of coins?
Remember to include the units.

Q23. How many minutes are there in two days?

Q24. A book is made by folding sheets of paper in half and stapling the sheets down the middle; this question paper is an example of an 8-page book. Sue makes a 32-page book. Which other three page numbers are printed on the same sheet of paper as page 9?

Q25. The lengths of the sides of a triangle are all whole numbers.
Two of the sides are 4cm and 7cm.
How many different lengths could the third side have?



Wellington School

Maths Challenge 2014

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 2014
Answers

Q1	D
Q2	D
Q3	A
Q4	D
Q5	A
Q6	C
Q7	C
Q8	B
Q9	A
Q10	E
Q11	E
Q12	C
Q13	D
Q14	A
Q15	A
Q16	D
Q17	E
Q18	D
Q19	C
Q20	C
Q21	7 11 13
Q22	£9.20 or 920p
Q23	2880
Q24	10 23 24
Q25	7