

The Wellington School Maths Challenge

24 November 2018



Q1. Which of these numbers is not in the 1009 times table?

- A.** 2018 **B.** 3027 **C.** 5045 **D.** 10090 **E.** 20108

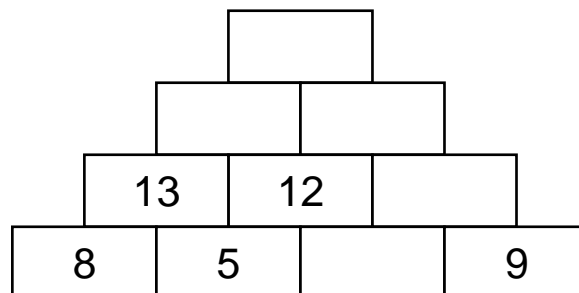
Q2. When these decimals are placed in order, which is in the middle?

- A.** 5 **B.** 5.5 **C.** 5.55 **D.** 5.505 **E.** 5.055

Q3. If I've been in exams, on every question of our exam, I've looked for colours in the words. For example, both "re-entered" and "more dogs" contain the word red. It's easy, and it's even quite fun! Taking this to new heights, it would be good to find numbers instead. Which number less than eleven is not written in this question?

- A.** 3 **B.** 6 **C.** 8 **D.** 9 **E.** 10

Q4. In this wall each brick is the sum of the two bricks beneath it. What number will fill the top brick?



- A.** 53 **B.** 54 **C.** 55 **D.** 56 **E.** 57

Q5. Which of these points is closest to (0,0) ?

A.
(4,0)

B.
(3,1)

C.
(2,2)

D.
(1,3)

E.
(0,4)

Q6. Sam has some sequences of numbers.
The first three terms of a sequence are: 6, 42, 294 ...
What is the fifth term of the sequence?

A.
3822

B.
4116

C.
14398

D.
14406

E.
15106

Q7. Which of these calculations gives a different answer to the others?

A.
 $3^3 + 3$

B.
 $4 \times \sqrt{4} \times 4$

C.
 $5 + 5 \times 5$

D.
 $6 \times 6 - 6$

E.
 $\sqrt{9} + 9 \times \sqrt{9}$

Q8. £1 is worth the same as €1.12. A coat costs £25.
How much would it cost in Euros?

A.
€7.84

B.
€25.30

C.
€26.20

D.
€28.00

E.
€100

Q9. Henry cuts his cake into four equal pieces so the angle at the centre of each slice 90° . Holly cuts her cake into eight equal pieces and Rowan cuts his cake into twelve equal pieces.
What is the difference between the angles at the centres of Holly and Rowan's pieces?

A.
 15°

B.
 20°

C.
 22°

D.
 25°

E.
 30°

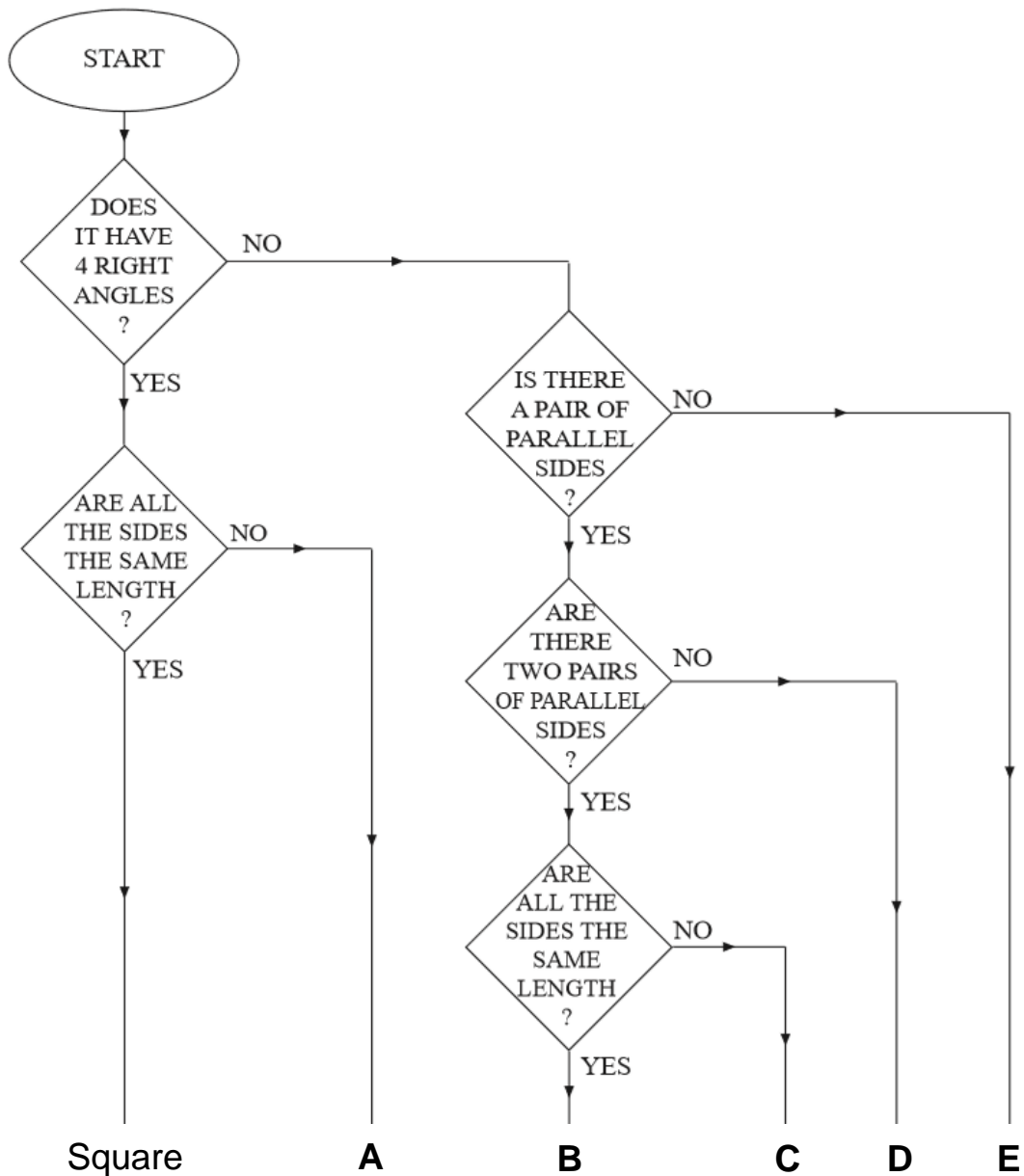
Q10. What is the value of $x^2 - 3y$ when $x = 5$ and $y = 4$?

- A.** - 9
- B.** - 2
- C.** 13
- D.** 18
- E.** 40

Q11. Which of these maths words is spelled correctly?

- A.** forty
- B.** sircle
- C.** rombus
- D.** parrallell
- E.** isoseles

Q12. Below is a flow diagram for sorting quadrilaterals. Which letter represents a trapezium?



Q13. Which of these gives the smallest answer?

A.
 -1×-2

B.
 $-1 \times -2 \times -3$

C.
 $-1 \times -2 \times -3 \times -4$

D.
 $-1 \times -2 \times -3 \times -4 \times -5$

E.
 $-1 \times -2 \times -3 \times -4 \times -5 \times -6$

Q14. What is the sum of the first ten square numbers?

A.
110

B.
384

C.
385

D.
386

E.
387

Q15. Here is a bus timetable:

Newport	06:50		07:25	08:45	09:10	09:45
Underwood	07:00	07.25	07:41	08:55	09:19	09:53
Magor	07:11	07.41	07:51	09:04	09:31	10:02
Rogiet	07:18	07.59	07:59	09:11	09:38	10:11
Caldicot	07:29	08.12	08:09	09:16	09:47	10:16
Portskewett	07:33	08.15	08:14	09:20	09:53	10:21
Chepstow	07:45	08.30	08:30		10:05	10.40

Victoria arrives at Underwood at 08:50 and wants to take the bus to Chepstow.

How long after 08:50 will Victoria arrive at Chepstow?

A. 1 hr 10 mins **B.** 1 hr 15 mins **C.** 1 hr 20 mins **D.** 1 hr 30 mins **E.** 1 hr 50 mins

Q16. Points A and B are 30 metres apart.

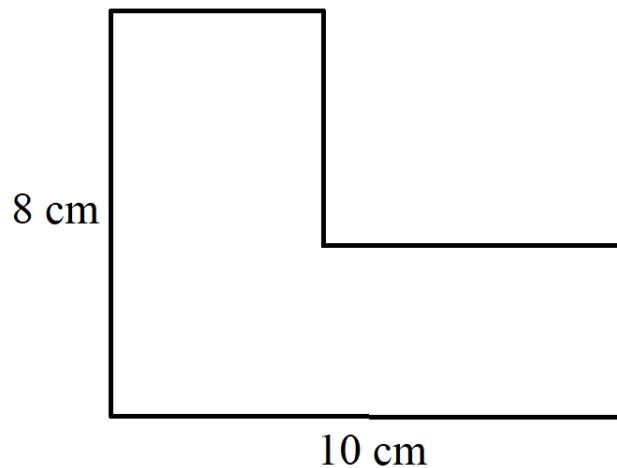
Andy starts at A and walks towards B at 2 metres per second.

Marek starts at B and walks towards A at 3 metres per second.

How far away from A are they when they meet?

A. 10 metres **B.** 12 metres **C.** 14 metres **D.** 16 metres **E.** 18 metres

Q17. What is the perimeter of this shape?



- A.** 18 cm **B.** 32 cm **C.** 36 cm **D.** 54 cm **E.** 80 cm

Q18. A 3 digit number is called an Armstrong number if it is equal to the sum of the cubes of its digits.
Which of the following is not an Armstrong number?

- A.** 153 **B.** 255 **C.** 370 **D.** 371 **E.** 407

Q19. Trudy chooses a prime number and multiplies it by three.
What are the possible remainder(s) when she divides this new number by six?

- A.** 0 **B.** 1 **C.** 3 **D.** 0 or 3 **E.** 1 or 3

Q20. Sam has some sequences of numbers. The third, fourth and fifth terms of a sequence are: ... 1352, 17576, 228488.
What is the first term of this sequence?

- A.** Four **B.** Five **C.** Six **D.** Seven **E.** Eight

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

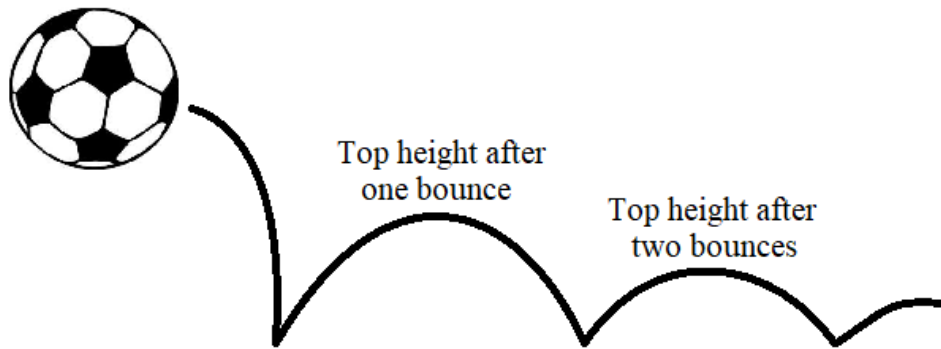
Q21. A matchbox contains some matches. Tom doubles the number of matches then takes away 8, then doubles the number of matches left and takes away 8 again, then does the same for a third time. The box is now empty.

How many matches were in the matchbox at the start?

Q22. There are 16 ounces in 1 pound, 14 pounds in 1 stone and 8 stones in 1 hundredweight.

How many hundredweights is 10752 ounces?

Q23. Sue drops a ball and watches it bounce:



The ball is dropped from a height of one metre. Each time it hits the floor, it bounces up to half the height of the previous bounce.

What top height does the ball reach after hitting the floor for the fifth time? Give your answer in centimetres.

Q24. Peter's calculator is broken.

Only the buttons labelled 1, 3, 9, – and = are working.

Peter can display the number 87 by typing $91 - 3 - 1 =$

So he needs to press seven buttons.

What is the least number of buttons that Peter needs to press in order to display 291 ?

Q25. 15% of a number is 12. What is $\frac{7}{16}$ of the number?



Wellington School

Maths Challenge 2018

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. |_____| cm

24. |_____|

25. |_____|

Maths Challenge 2018

Answers

Q1	E
Q2	B
Q3	B
Q4	A
Q5	C
Q6	D
Q7	B
Q8	D
Q9	A
Q10	C
Q11	A
Q12	D
Q13	D
Q14	C
Q15	B
Q16	B
Q17	C
Q18	B
Q19	D
Q20	E
Q21	7
Q22	6
Q23	3.125 or equivalent
Q24	9
Q25	35