

The Wellington School Maths Challenge

26 November 2011



Q1. What is $1 \times 2 \times 3 \times 4 \times 5 \times 6$?

A.
120

B.
180

C.
240

D.
720

E.
123456

Q2. The number seventeen has 9 letters. What is the mean number of letters in the first nine counting numbers? Remember to add all the numbers together and then divide by nine.

A.
less than 4

B.
4

C.
between
4 and 5

D.
5

E.
more than 5

Q3. I start with £500. I add 10% and then add 10% of this new value. How much do I have now?

A.
£605

B.
£600

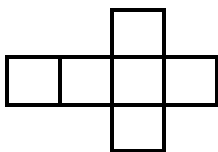
C.
£595

D.
£575

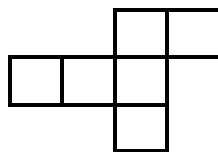
E.
£550

Q4. Which of these nets will not make a cube?

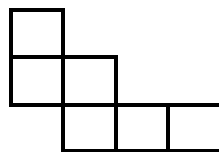
A.



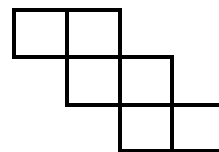
B.



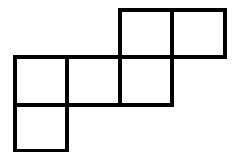
C.



D.



E.



Q5. Work out $13^3 - 13^2 - 13 =$

A.
2011

B.
2012

C.
2013

D.
2014

E.
2015

Q6. The factors of 24 are 1, 24, 2, 12, 3, 8, 4 and 6. 24 has 8 factors. How many different factors does 100 have?

A.
8

B.
9

C.
10

D.
11

E.
12

Q7. When these decimals are placed in order, which is in the middle?

A.
0.24

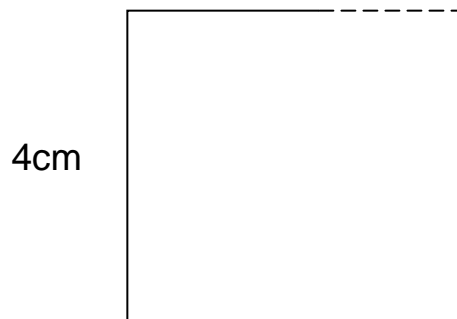
B.
0.4

C.
0.42

D.
0.04

E.
0.242

Q8. This rectangle has an area of 32cm^2 . What is its perimeter?



A.
12cm

B.
20cm

C.
22cm

D.
24cm

E.
26cm

Q9. Max buys 3 pencils costing 42p each and 6 pens costing 49p each. How much change does he get from £5?

- A.** none **B.** 89p **C.** 71p **D.** 80p **E.** £1.01

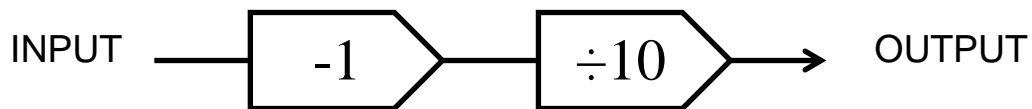
Q10. Fourteen apples cost £3.22. How much will seventeen cost?

- A.** £3.57 **B.** £3.68 **C.** £3.74 **D.** £3.87 **E.** £3.91

Q11. What fraction of the numbers under 100 start with the letter F?

- A.** $\frac{23}{99}$ **B.** $\frac{8}{33}$ **C.** $\frac{3}{11}$ **D.** $\frac{9}{33}$ **E.** $\frac{26}{99}$

Q12. Jane uses this sequence of operations. When she gets an output she uses it as the next input. She repeats the process a lot of times.



Jane starts with the number 9111.

Which number will not be one of her outputs?

- A.** 0.8 **B.** 9 **C.** 9.1 **D.** 91 **E.** 911

Q13. There are 3 red balls and 2 blue balls in a bag. Adam takes the balls out of the bag one at a time. In how many different orders can the colours be selected?

- A.** 10 **B.** 12 **C.** 13 **D.** 14 **E.** 15

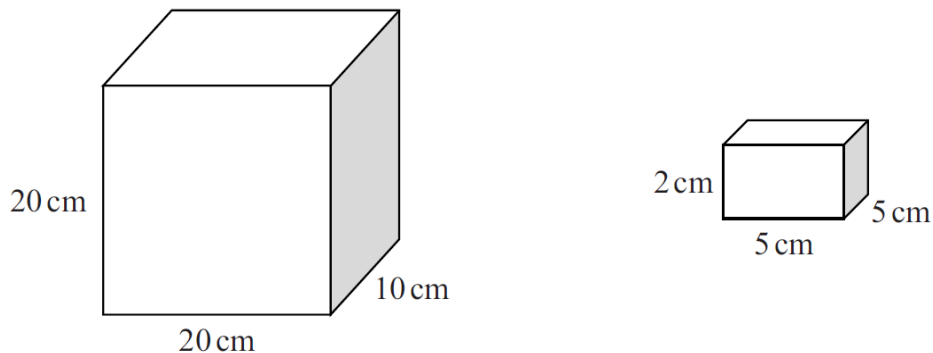
Q14. A square number ends with a 9. What will the next square number end with?

- A.** 4 **B.** 5 **C.** 6 **D.** 4 or 6 **E.** 4, 5 or 6

Q15. What is the angle between the hands on a clock at half past one?

- A.** 90° **B.** 105° **C.** 120° **D.** 135° **E.** 150°

Q16. The diagram shows two boxes that are cuboids.



How many smaller boxes could be fitted in the larger box?

- A.** 50 **B.** 60 **C.** 72 **D.** 80 **E.** 96

Q17. 2011 is a prime number. When is the next year that is prime?

- A.** 2012 **B.** 2013 **C.** 2015 **D.** 2017 **E.** 2019

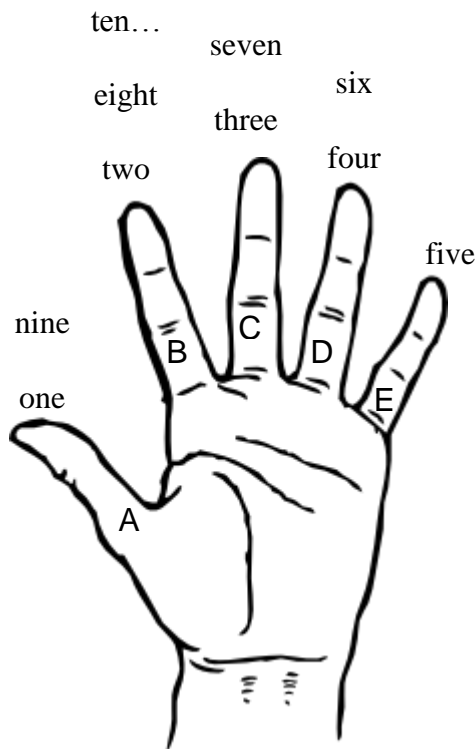
Q18. The masses of five books are 10g, 20g, 30g, 40g and 2kg. The total of the masses is:

- A.** 2.1kg **B.** 3kg **C.** 102g **D.** 21kg **E.** 210g

Q19. I start with $3x - 2$. I multiply by 2 and add three. What is the answer?

- A.** $3x$ **B.** $6x - 4$ **C.** $6x - 1$ **D.** $6x + 1$ **E.** $9x + 7$

Q20. Mr Reader 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 point to when he says “nine hundred and ninety nine”?



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

Q21. The first number in a sequence is 3, the second number is 7, the third is 11 and so on. What is the twentieth number in the sequence?

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

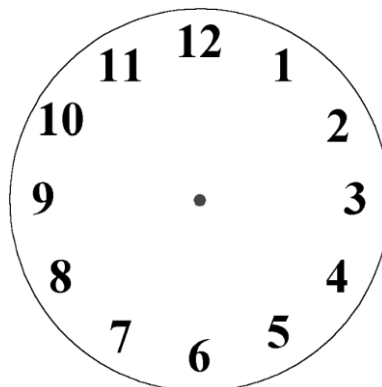
$$16 + 8 + 1 = 25$$

How would you write the number 153 using binary?

Q23. There are three numbers. When added together in pairs only, the sums come to 14, 18 and 22. What are the three numbers?

Q24. How many seconds are there in one day?

Q25. Draw two straight lines on this clock face so that the sums of the three sections are equal.





Wellington School

Maths Challenge 2011

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. |__|

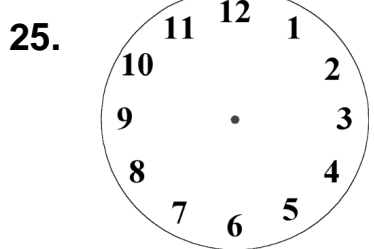
For the last five questions write your answers in the spaces provided.

21. |_____|

22. |_____|

23. |__| |__| |__|

24. |_____|



Maths Challenge 2011
Answers

- Q1 D
Q2 B
Q3 A
Q4 C
Q5 E
Q6 B
Q7 E
Q8 D
Q9 D
Q10 E
Q11 B
Q12 C
Q13 A
Q14 D
Q15 D
Q16 D
Q17 D
Q18 A
Q19 C
Q20 C
Q21 79
Q22 10011001
Q23 5 9 13
Q24 86400
Q25

