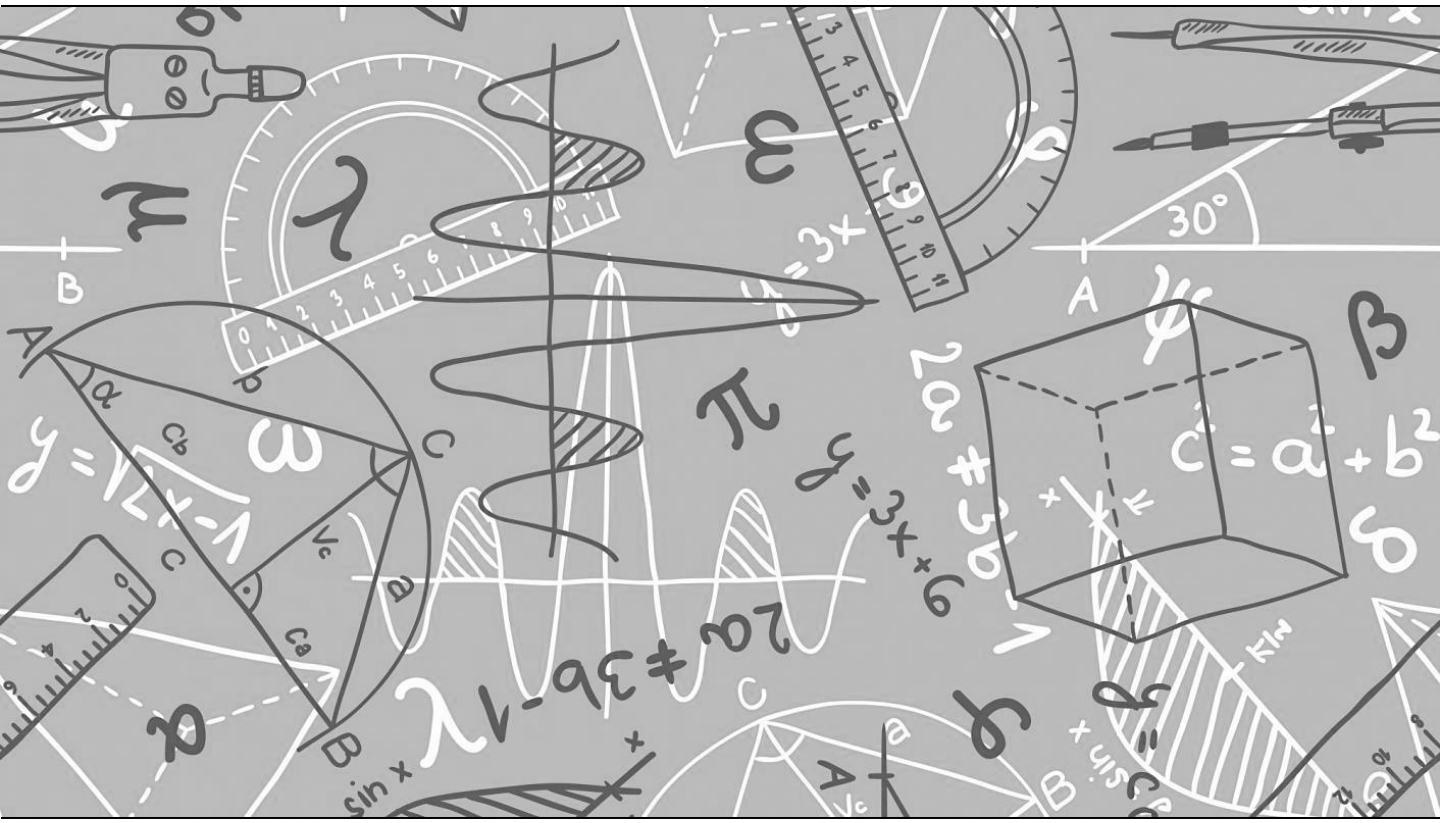
All Saints Catholic High School

Maths



We can't wait to meet you...

All the Maths teachers at All Saints Catholic High School are very much looking forward to meeting you, normally during transition days you find out about us, we find out about you and together we do some Maths. Unfortunately due to transition being cancelled we won't meet in person, however hopefully completing this booklet you will be able to find out some facts about the Maths teachers at All Saints, do some research into some of our favourite mathematicians and do some maths either on your own or with your family/carers. Do not worry if you cannot complete all of this booklet, do your best and feel free to message your friends and work together.

Meet the department…

In the Maths department we have 10 Maths Teachers. Throughout this booklet you will find out about some of our favourite Maths related things. Come back to this page to fill those in, can you find them all?

MR PLOWMAN
FAVOURITE NUMBER:

FAVOURITE MATHEMATICIAN:

MR BAKER
FAVOURITE NUMBER:

FAVOURITE MATHEMATICIAN:

MRS BANGERT
FAVOURITE NUMBER:

FAVOURITE MATHEMATICIA

MR ARMSTRONG
FAVOURITE NUMBER:

FAVOURITE MATHEMATICIAN:

MR CASSIDY
FAVOURITE NUMBER:

FAVOURITE MATHEMATICIAN:

MR CHADBURN
FAVOURITE NUMBER:

FAVOURITE MATHEMATICIA

MRS HARTLEY
FAVOURITE NUMBER:

FAVOURITE MATHEMATICIAN:

MISS DAVENPORT
FAVOURITE NUMBER:

FAVOURITE MATHEMATICIAN:

MRS GILLEN
FAVOURITE NUMBER:

FAVOURITE MATHEMATICIA

MRS MURASA
FAVOURITE NUMBER:

FAVOURITE MATHEMATICIAN:

MR MCCLEAN
FAVOURITE NUMBER:

FAVOURITE MATHEMATICIAN:

MISS MCCREADY
FAVOURITE NUMBER:

FAVOURITE MATHEMATICIAN:

MR UTTLEY
FAVOURITE NUMBER:

FAVOURITE MATHEMATICIAN:

The 24 game…

Try this with your family – who is the quickest?

A fun activity that we would like you to try is the 24 game-where the aim is to make the number 24.

For each game you have 4 numbers, you have to use **ALL** four numbers, you can add, subtract, multiply or divide these to make 24.

Example:

2 2 6 8

To make 24, I can do (8 - 2) x (6 – 2)

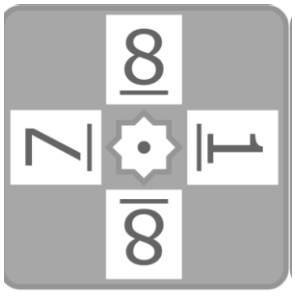
8 -2 = 6

6 -2 = 4

6 x 4 = 24

ONE DOT - EASIEST

Now it's your turn, the 24 cards are below they get harder as you go

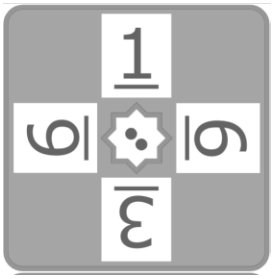


Mrs Bangert's favourite number is 3. Try adding up the digits of some multiples of 3 to see why.

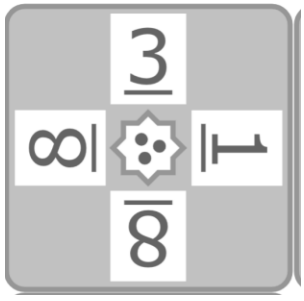
The 24 game…

Miss Davenport's favourite number is the 4th prime number.

TWO DOT - MEDIUM



THREE DOT - HARDER



Mrs Murasa's favourite number is equal to 2X2X3

Mr. McClean's favourite number is the first **perfect number**. Can you find out what it is?

Key Skills…

When you get to a page like this, spend 10 minutes completing the skills check questions based on topics from Y6.

Question 1 Write in figures : thirteen thousand, five hundred and two units	**Question 2** Write in figures : seventy seven thousand, eight tens and three units	**Question 3** List the factors of 51	**Question 4** List the factors of 36
Question 5 Work out 7 × 10 =	**Question 6** Work out 10 × 10 =	**Question 7** Simplify $\frac{8}{16}$	**Question 8** Simplify $\frac{12}{42}$
Question 9 Find 50% of £180	**Question 10** Find 25% of £120	**Question 11** Round 2084 to the nearest 100	**Question 12** Round 3372 to the nearest 10
Question 13 Work out 86 × 8 =	**Question 14** Work out 630 × 9 =	**Question 15** Simplify 5c + 5c + 6c	**Question 16** Simplify 10a + 2b + 8a + 7b
Question 17 Work out 39253 + 15736 =	**Question 18** Work out 30730 + 18364 =	**Question 19** Work out 8 × 2 - 5	**Question 20** Work out 6 + 11 × 3

SKILLS CHECK

Score

Mr Chadburn's favourite Mathematician is **Leonardo of Pisa**, also known as **Fibonacci**, who was an Italian man who studied Maths in the 11th century. He introduced the number system we now use and he discovered a pattern called the Fibonacci sequence. It's a series of numbers that starts with 0 and 1, and each number after is found by adding the two previous numbers (0, 1, 1, 2, 3, 5…)The sequence just keeps going on and on.

Can you find the first 10 numbers in the sequence?

Mrs Hartley's favourite number is equal to the number of sides on a pentagon multiplied by the second square number.

If you add Miss McCready's number to any number, the number does not change. Can you work out what her favourite number is?

Word Searches

Each of the blocks of letters below represents a maze. A way has to be found through the maze moving (up and down or across but **not** diagonally) from letter to letter. No letter may be used twice. In some cases arrows show where the maze is to be entered and left. The letters visited must spell words as you go, and these words can be written on the dashed lines to the right of each maze. The number of dashes show how many letters are in each word. The first one has been started.

↓ ↑

M E R E E R U
R T G E E A S
E D E D M M U
M I C E R E S
A L N V A U Q
E H 0 E I C S
X A G R T A L

METRE
DEGREE
DECI _ _ _
_ _ _ _ _ _ _
_ _ _ _ _ _ _ _
_ _ _ _ _ _
_ _ _
_ _ _ _ _ _ _

↓ ↑

C E R T I L _ _ _ _ _ _
I R O R L E _ _ _ _
L C T C I N _ _ _
E O D A F T _ _ _ _ _ _ _ _
A A D B T C _ _ _ _ _ _
R E S U R A _ _ _ _
_ _ _ _ _

↓

G M E L E P _ _ _ _ _ _ _ _
E O T G N O _ _ _ _ _ _
N Y R R A L _ _ _ _ _
U M B E G Y _ _ _ _ _ _ _
O S U N O D → _ _ _ _
B L L P M I _ _ _ _ _ _
N O I M A R _ _ _ _ _
G P R E P Y _ _ _ _ _ _ _

O I T D I O _ _ _ _ _ _
R R A O U B _ _ _
E D T C C N _ _ _ _ _ _
I N A G T O _ _ _ _ _ _ _
L Y C O E S ← _ _ _ _ _ _ _
B U S N R Q _ _ _ _ _ _ _ _
M O H R A U _ _ _ _ _

Mr McClean's favourite mathematician Leonhard **Euler** (pronounced Oiler) (April 15, 1707 – September 7, 1783) was a Swiss mathematician and physicist. He made a number of notable discoveries including that of the number **e** (an important number in lots of areas of Maths) and the solution of the Bridges of Königsberg problem. Can you find out what this problem is?

Ada Lovelace is an English mathematician who has been called 'the first computer programmer.' In the mid-1800s, Lovelace wrote an algorithm for a computing machine, way before this had occurred to people as something that was even possible.

Mr Cassidy's favourite number is 13! (13 factorial) which is equal to 6,227,020,800, which is the number of different ways the 13 Maths teachers could sit down in a row.

Key Skills...

When you get to a page like this, spend 10 minutes completing the skills check questions based on topics from Y6.

Name :

61.2

Question 1 Write in figures : six thousand, four tens and six units	**Question 2** Write in figures : One hundred and twenty six thousand, nine tens and three units	**Question 3** List the factors of 30	**Question 4** List the factors of 20
Question 5 Work out 306 × 1000 =	**Question 6** Work out 34 × 1000 =	**Question 7** Simplify $\frac{20}{70}$	**Question 8** Simplify $\frac{18}{63}$
Question 9 Find 75% of £720	**Question 10** Find 75% of £500	**Question 11** Round 6199 to the nearest 100	**Question 12** Round 2096 to the nearest 1000
Question 13 Work out 77 × 9 =	**Question 14** Work out 397 × 6 =	**Question 15** Simplify 9x + 4x - 3x	**Question 16** Simplify 10a + 3b + 7a + 6b
Question 17 Work out 37959 + 32050 =	**Question 18** Work out 24509 + 19451 =	**Question 19** Work out 5 × 2 + 2	**Question 20** Work out 5 × 4 + 3

SKILLS CHECK

Score

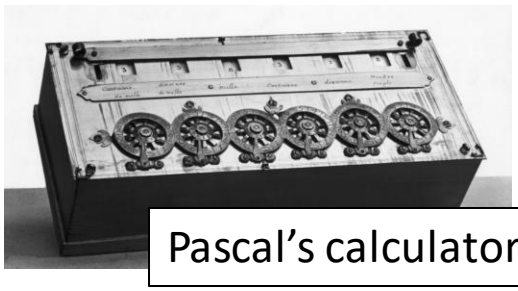
Mr Plowman's favourite mathematician is 'the first computer programmer.'

Katherine Johnson was an American mathematician, who was critical to the success of the first NASA space missions.

Sir Andrew Wiles is a British mathematician, most famous for proving 'Fermat's Last Theorem', a long-standing problem that was first mentioned in 1637, but took until 1994 to be proven, a total of 358 years of combined work by mathematicians.

The calculator transformation..

Blaise Pascal, in his short 39 years of life, made many contributions and inventions in several fields. He is well known in both the mathematics and physics fields. In mathematics, he is known for contributing Pascal's triangle and probability theory. He also invented an early digital calculator and a roulette machine.



Pascal's calculator

The calculator we use in school. This can be bought once you start school in September.

The modern calculator can now be found everywhere, both mini and large versions and is embedded into devices such as laptops and mobile phones. How many devices that have calculators can you find in your house?

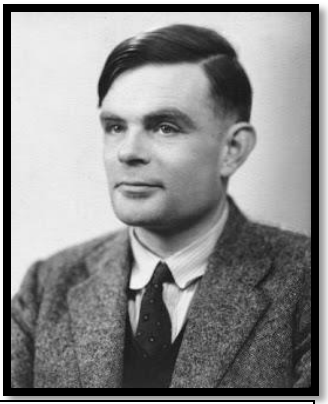
Miss Mc Cready's favourite mathematician was crucial to the first NASA space missions.

Code Breaking…

Mr Baker and Mr Armstrong's favourite number is the only even prime number

Alan Turing

Alan Turing was a British mathematician. He made major contributions to the fields of mathematics, computer science, and artificial intelligence. He worked for the British government during World War II, when he succeeded in breaking the secret code Germany used to communicate.



In September 1939 Great Britain went to war against Germany. During the war, Turing worked at the Government Code and Cypher School at Bletchley Park. Turing and others designed a code-breaking machine known as the Bombe. They used the Bombe to learn German military secrets. By early 1942 the code breakers at Bletchley Park were decoding about 39,000 messages a month. At the end of the war, Turing was made an Officer of the Most Excellent Order of the British Empire.

Can you crack the code to reveal the 3 Maths teachers whose favourite mathematician is Turing?

A	B	C	D	E	F	G	H	I	J	K	L	M
55	47	84	10	9	75	59	64	32	15	23	50	26
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
80	63	19	3	27	30	21	92	18	35	99	25	199

22+25=	
110÷2=	
0.8 x 100=	
177 ÷3=	
3^2=	
80-53=	
3 x 7=	

12 x 7 =	
5 x 11=	
120 ÷ 4 =	
0.5 x 60 =	
2^5=	
2005-1995=	
13^2-12^2=	

5^2-15=	
5 x (2+9)=	
36 ÷ 2 =	
5.4÷0.6=	
4^2 x 5 =	
8th prime number =	
7 x 9=	
3^3=	
3+6 x 3=	

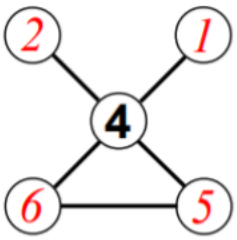
Can you make up some calculations to spell out your name using the same code breaker grid?

Can you make up your own message for a friend to decode?

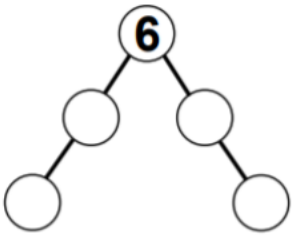
Totalines

Mr Chadburn's favourite number is φ(phi), the Golden Ratio. This is a very special **irrational** number. Make sure you ask him about it when you meet him in September.

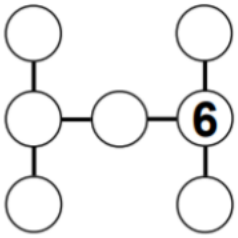
Numbers have to be placed in the empty circles. The numbers to be used are listed under each diagram and no given number may be used twice. The object is to place the numbers so that all those which lie along a straight line, as shown by the lines drawn, add up to the total which is also given under the diagram. The first one has been done for you.



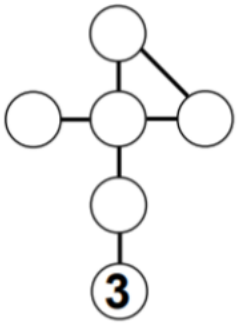
Use 1, 2, 5, 6
Total **11**



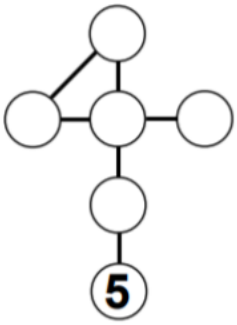
Use 2, 3, 4, 5
Total **13**



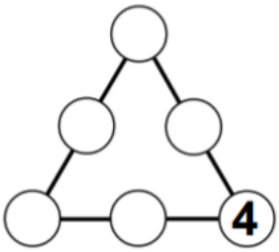
Use 0, 1, 2, 3, 4, 5
Total **10**



Use 1, 2, 4, 5, 6
Total **11**



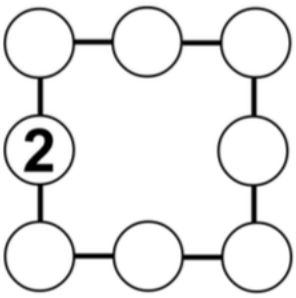
Use 0, 1, 3, 4, 6
Total **10**



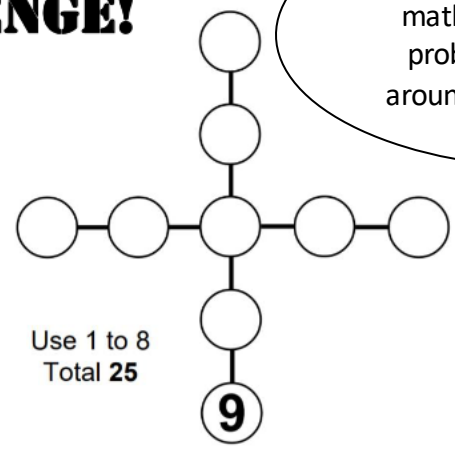
Use 0, 1, 2, 3, 5
Total **9**

Mr Armstrong's favourite mathematician solved a problem that had been around for over 300 years.

CHALLENGE!



Use 3, 4, 5, 6, 7, 8, 9
Total **18**



Use 1 to 8
Total **25**

Sir Isaac Newton (Mr Uttley's favourite mathematician) was an English mathematician, physicist and astronomer who is best known for his theories of 'calculus' (how things change over time.)

Key Skills...

When you get to a page like this, spend 10 minutes completing the skills check questions based on topics from Y6.

Name : 61.5

Question 1 Write in figures : nineteen thousand, eight hundred and three units	**Question 2** Write in figures : six thousand, eight tens and eight units	**Question 3** List the factors of 99	**Question 4** List the factors of 28
Question 5 Work out 96 × 10 =	**Question 6** Work out 31 × 100 =	**Question 7** Simplify $\frac{6}{33}$	**Question 8** Simplify $\frac{6}{42}$
Question 9 Find 50% of £880	**Question 10** Find 50% of £360	**Question 11** Round 3291 to the nearest 10	**Question 12** Round 1928 to the nearest 100
Question 13 Work out 86 × 6 =	**Question 14** Work out 171 × 2 =	**Question 15** Simplify 7y - 4y - 5y	**Question 16** Simplify 8a + 4b + 5a + 3b
Question 17 Work out 12389 + 9125 =	**Question 18** Work out 29494 + 3633 =	**Question 19** Work out 34 - 3 × 4	**Question 20** Work out 21 - 5 × 2

SKILLS CHECK

Score

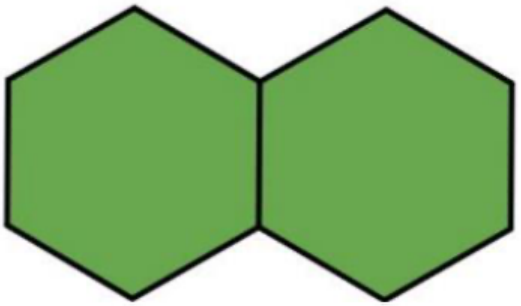
Maryam Mirzakhani was an Iranian mathematician who was awarded the Fields Medal (the mathematical equivalent to a Nobel Prize) in 2014, becoming the first Iranian and only woman to date to be awarded the prestigious prize.

Mr Uttley's favourite number is neither positive or negative. Can you tell what it is?

Mrs Murasa enjoyed the work of Johnny Ball when she was a child. He hosted several TV shows about Maths.

Mary Jackson was an American mathematician and aerospace engineer, working for NASA. In 1958, she became NASA's first African-American female engineer.

A Hexagon Problem



Heather can make two connected hexagons by drawing 11 lines.

What is the minimum number of lines Heather needs to draw 12 hexagons?

Extension: What numbers of hexagons are the most efficient to draw and why?

This problem is taken from puzzleoftheweek.com. If you enjoy doing puzzles then have a go at the weekly problems on this website.

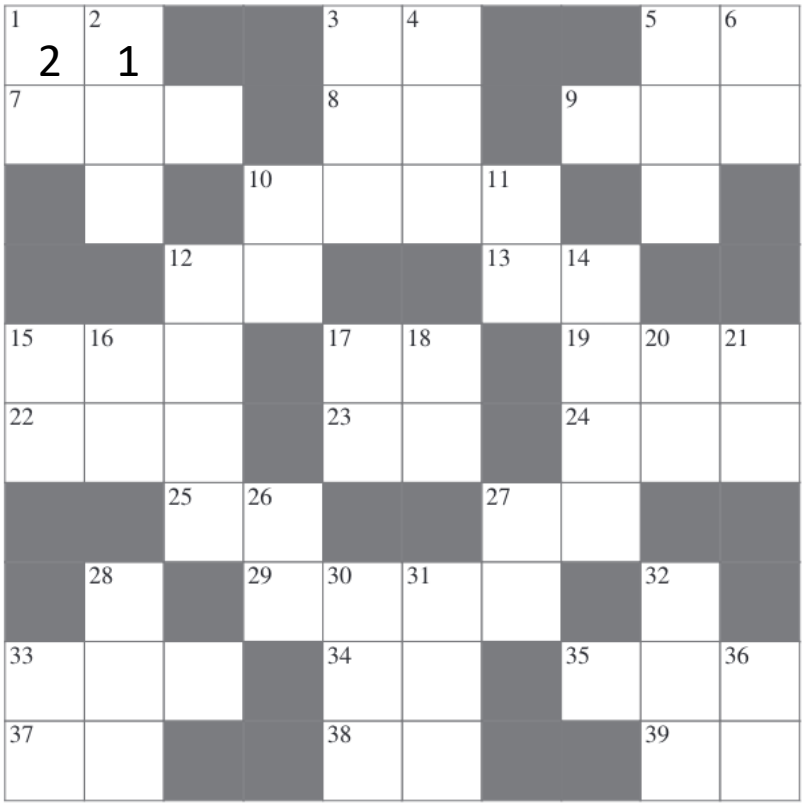
Mr Plowman's favourite numbers are the 'powers of 2', which are 1, 2, 4, 8, 16, 32,… . What happens if you add the first 2 together? The first 3? 4? 5? What patterns do you notice?

Dr Roger Webster

The favourite mathematician of one of the Maths department is their university lecturer, Dr Roger Webster who taught at the University of Sheffield. The person who has Dr Webster as their favourite mathematician's favourite number is the first even number.

Cross Number...

USE THE QUESTIONS BELOW TO COMPLETE THE CROSS NUMBER.



ACROSS

1. The number of spots on a standard dice (2)
3. The largest two-digit multiple of 13 (2)
5. One more than 8 Across (2)
7. One quarter of the square of 6 Down (3)
8. $2 \times 2 \times 2 \times 2 \times 2$ (2)
9. A cube number (3)
10. 15 Across + 3 Down + 6 Down + 21 Down + 36 Down (4)
12. 39 Across − 33 Down (2)
13. Twice (1 Across + 1 Down) (2)
15. 1 Down × 38 Across (3)
17. 36 Down − 8 Across (2)
19. A square number (3)
22. The smallest three-digit square number with all its digits different (3)
23. 1 Across + 6 Down (2)
24. A multiple of 4 Down (3)
25. 27 Across + 37 Across (2)
27. 39 Across + 1 Down (2)
29. 200 × 12 Across + 27 Down (4)
33. 10 times 2 dozen (3)
34. A square of a square number (2)
35. 5 × 1 Across + one-seventh of 12 Across (3)
37. A half of 8 Across (2)
38. A cube number (2)
39. One less than 6 Down (2)

DOWN

1. A prime number (2)
2. The sum of the first ten prime numbers (3)
3. The number of hours in 39 days (3)
4. $2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2$ (3)
5. 22 Across + 28 Down (3)
6. The number of minutes in three-fifths of an hour (2)
10. A multiple of 7 (2)
11. 3 × 37 Across (2)
12. (22 Across − 6 Down) × 9 (4)
14. A number all of whose digits are the same (4)
15. A prime number (2)
16. 27 Across − 8 Across (2)
17. A multiple of 9 (2)
18. A prime number (2)
20. A square number (2)
21. The square of a square number (2)
26. 3 × 12 Across (2)
27. Two-thirds of 36 Down (2)
28. 22 Across − 1 Down (3)
30. 1 Across × 26 Down (3)
31. 25 Across + 4 Down + 5 Down (3)
32. 17 Down + 27 Across (3)
33. The sum of the digits of 1 Down, 17 Across and 17 Down (2)
36. One and a half times 27 Down (2)