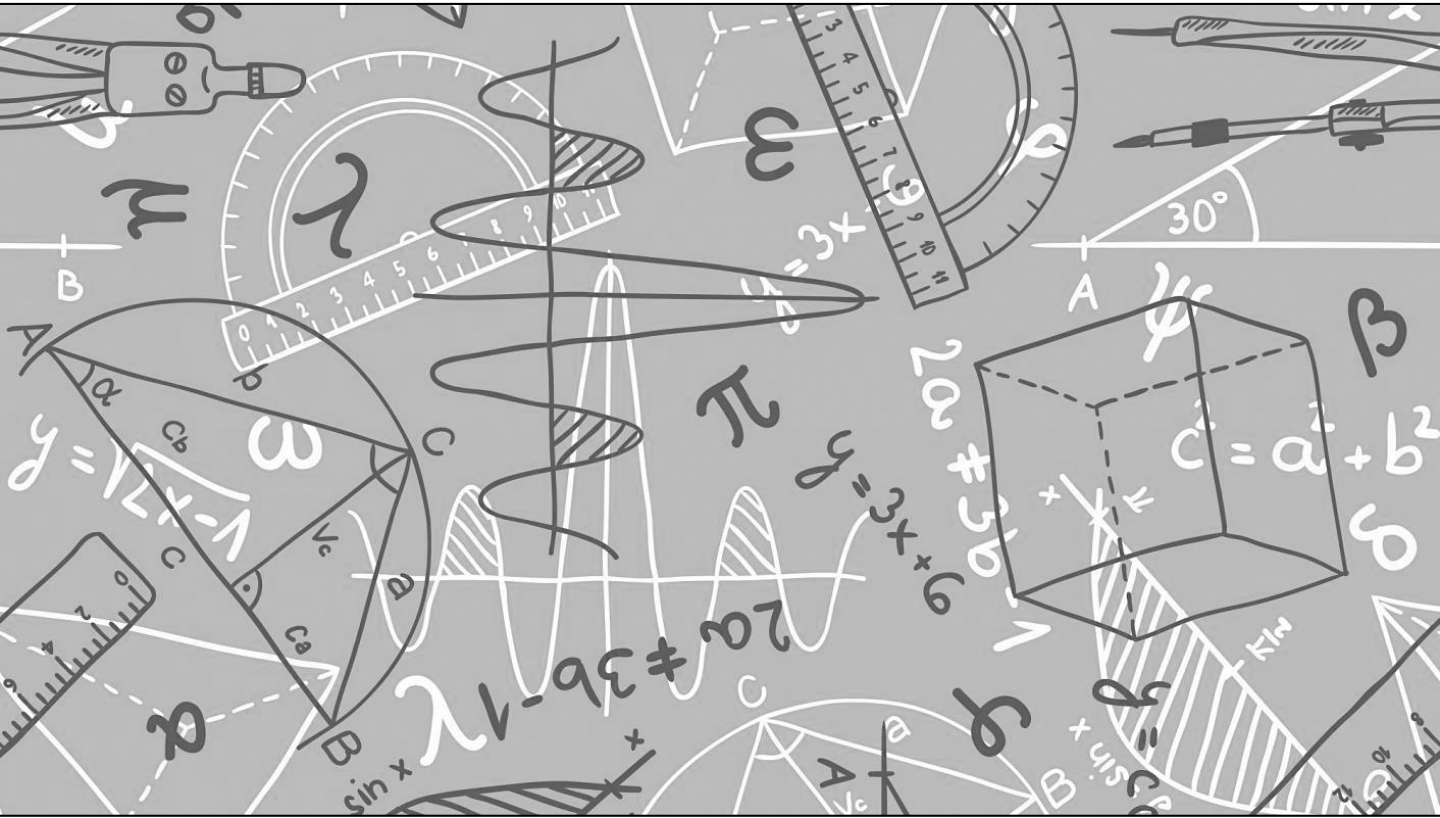




William Hulme's Grammar School
The best in everyone™
Part of United Learning

Virtual Transition: Maths



We can't wait to meet you...

All the Maths teachers at William Hulme's are very much looking forward to meeting you. Normally during transition weeks, you find out about us, we find out about you and together we do some Maths. Unfortunately due to transition being virtual this year we won't meet in person. However, completing this booklet you will be able to...

- Find out some facts about the Maths teachers at William Hulme's!
- Do some research into some of our favourite mathematicians!!
- Finally, the best bit, do some maths either on your own or with your family/carers! 😊

Meet the department...

In the Maths department we have 12 Maths Teachers, our maths corridor looks like this. Throughout this booklet you will find out about some of our favourite Maths related things. Come back to this page to fill in our favourite numbers!

| | | |
|--------------------------------------|-------------------|---------------------|
| MR HARRISON HEAD OF MATHS | Favourite Number: | Favourite Number: |
| DR STOKES | Favourite Number: | MISS SEMEHEN |
| MR MCMENAMIN | Favourite Number: | MISS ALLEN |
| MR KALAHER | Favourite Number: | MISS MOHAMED |
| MR HADJIPAVLOU | Favourite Number: | MISS SMITH |
| MR ROBINSON | Favourite Number: | MR ROTHWELL |
| MR RODGERS | Favourite Number: | |

The 24 game...

Try this with
your family –
who is the
quickest?

One of our favourite things to do on transition is to play the 24 game. The aim of the game is to be the first person 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 $(8 - 2) \times (6 - 2)$

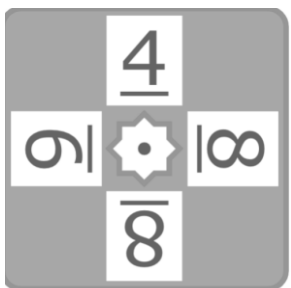
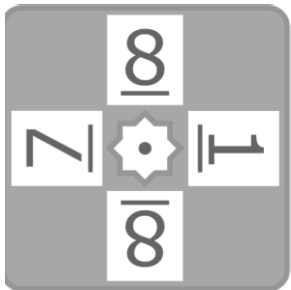
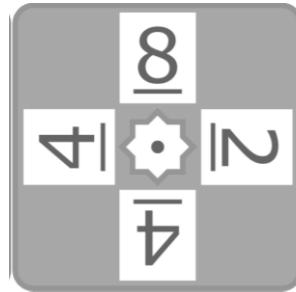
$$8 - 2 = 6$$

$$6 - 2 = 4$$

$$6 \times 4 = 24$$

ONE DOT - EASIEST

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



Mr Harrison's
favourite number is
the sum of $0.2 +$
 1.418 (The Golden
Ratio)!

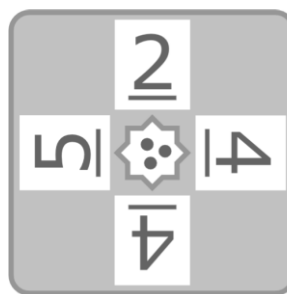
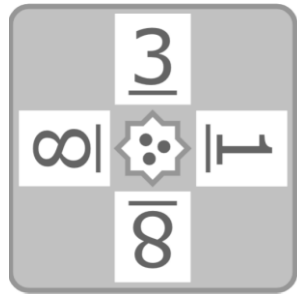
The 24 game...

Dr Stokes
favourite
number is
- 5 - - 5

TWO DOT - MEDIUM



THREE DOT - HARDER



Mr McMEnamin's
favourite number
is the square root
of 49

Miss Smiths favourite number is the missing part of this formula:
Area of a circle = $__r^2$

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 $7 \times 10 =$ | Question 6 Work out $10 \times 10 =$ | 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 $86 \times 8 =$ | Question 14 Work out $630 \times 9 =$ | 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 $8 \times 2 - 5$ | Question 20 Work out $6 + 11 \times 3$ |

SKILLS CHECK

Score

www.mathsbox.org.uk

Miss Mohamed's favourite Mathematician is Fibonacci who was an Italian man who studied math and theories back in the 11th century. 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?

Maths Keywords...

At the start of the Maths lesson you may be asked to write the maths keywords down in your book. Can you find all the keywords you will need for your first half term at William Hulme's?

Y R Y A P F F T Z P M M D Q U M Z L N U
F I J X F U D M E E B U D O N D I M X E
B D P J B K C D B R U F I H I B Y V W J
C K H U T U G Z I I Z M D L T V F S F S
Y P I Z P L N M G M I Q A W S Y V D R Q
H X A T M Y K O P E L S Q W R E P E W K
C O D K Q I A Q D T C T E E S M H R U T
P L A C E V A L U E G Q B T D Z D D M J
J V B S H U K I N R S M D D A T M N K N
Z T R K F S L D L P U C M M N M O U G M
W O O Z D A I P C N R Q E X Z P I H J M
E M N T M N V Y E C C C Q N A R J T Q N
U K E I G T V R C F R N B H D Q H Z S X
P N C X A U A L G N S L B W V I D I D E
S E T F O U K L W Q C T I R Q N N P N E
D Z J D Q P T C A R T B U S O R K G B F
F V N S N I T G B P K G L R W U D J R V
O F V S G P O L Y G O N Q I X R N R O L
O U J V F K T B N Q V Z U D U V A D K O
E L E F T K D W E F Y A C L J T J N R L

Miss Semehens favourite number is:

$$\sqrt[3]{343}$$

ADD
ASCENDING
DECIMAL
DESCENDING
ESTIMATE
HUNDREDS
PERIMETER

PLACEVALUE
POLYGON
ROUND
SQUARENUMBER
SUBTRACT
TENS
UNITS

Mr Hadjipavlou's favourite number is $625 \div 25$

Miss Semehen's favourite mathematician is Leonhard **Euler** (pronounced Oiler) (April 15, 1707 – September 7, 1783) was a Swiss mathematician and physicist. He spent most of his life in Russia and Germany. **Euler** made important discoveries in fields like calculus and topology. He also made many of the words used in maths today.

Miss Mohamed's Favourite Number

Miss Mohamed is new like you in September, she has hasn't been to William Hulme's yet to share her favourite number. Instead she has sent me some clues. Can you work out Miss Mohamed's favourite number?

| | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|-----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 |
| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 |
| 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |

Guess my number 1

The number is a multiple of 3

ATM

Guess my number 1

The digital sum is 6

ATM

Guess my number 1

Find the number between 1 and 99

ATM

Guess my number 1

It is more than 5 squared

ATM

Guess my number 1

One of the digits is a 2

ATM

Guess my number 1

It is less than 55

ATM

Guess my number 1

It is not a square number

ATM

Key Skills...

Mr Robinson's favourite number is the product of 8 and 7

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

Name :

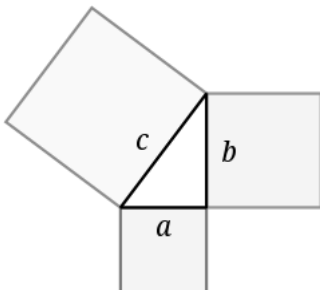
61.2

| | | | |
|---|--|---|--|
| 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 $306 \times 1000 =$ | Question 6 Work out $34 \times 1000 =$ | 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 $77 \times 9 =$ | Question 14 Work out $397 \times 6 =$ | 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 $5 \times 2 + 2$ | Question 20 Work out $5 \times 4 + 3$ |

SKILLS CHECK

Score

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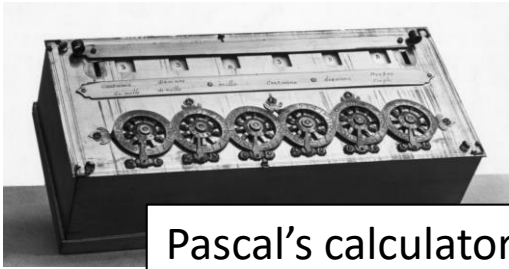


Pythagoras of Samos was a famous Greek mathematician and philosopher (c. 570 – c. 495 BC). He is known best for the proof of the important Pythagorean theorem, which is about right angled triangles. He started a group of mathematicians, called the Pythagoreans, who worshiped numbers and lived like monks.

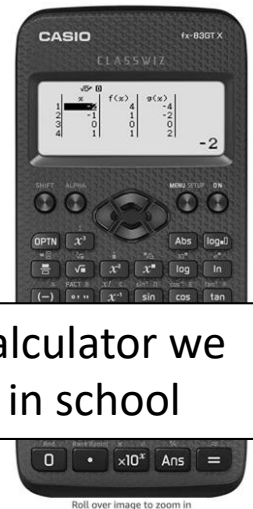
Can you find out what the Pythagorean theorem is?
You will use it in Year 9.

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

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?

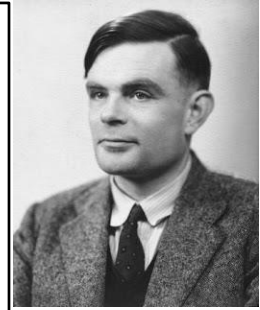
Mr Rodgers favourite number is $\sqrt[2]{25^2 - 24^2}$

Code Breaking...

Miss Kalaher'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 two 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 | 69 | 199 |

| | |
|-----------------------|--|
| 13×2 | |
| $3 \times 3 \times 3$ | |
| $52 \div 2$ | |
| $100 - 4^2$ | |
| $19 - - 7$ | |

| | |
|------------------|--|
| $\sqrt{81}$ | |
| 0.8×100 | |
| 5×11 | |
| $100 - 74$ | |
| 2^5 | |
| 4×20 | |
| $3 + 9 + 9 + 5$ | |
| 8×4 | |

| | |
|------------------------|--|
| $90 \div 3$ | |
| $(45 \div 3) \times 2$ | |
| $70 \div 2 - 5$ | |
| $5^2 + 1$ | |
| $6^2 - \sqrt{16}$ | |
| 3×7 | |
| 8×8 | |

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?

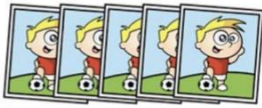
Maths Challenges...

Mr Rothwell's number is 110 divided by 10

Can you solve all the Maths challenges?
They get more difficult as you get them..

Stickers come in packs of 5.

Max buys 12 packs.



He gave his three friends some stickers.

They each receive the same number.

He has 27 stickers left.

How many stickers did Max give each of his friends?

Here are 3 containers.



- The jug can hold **1500 ml**.
- The bucket can hold **2 litres**.
- The barrel can hold **15 litres**.

Anisa wants to fill the barrel with water.

Find 2 ways that Anisa can fill the barrel using the jug and bucket.

Here is a 3 x 3 grid with some shapes in.

| | | | |
|--|--|--|-----|
| | | | 108 |
| | | | 102 |
| | | | 95 |

Each shape represents a number.

The sum of each row is shown at the right of the table.

Find the value of each of the shapes.

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 $96 \times 10 =$ | Question 6 Work out $31 \times 100 =$ | 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 $86 \times 6 =$ | Question 14 Work out $171 \times 2 =$ | 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 $34 - 3 \times 4$ | Question 20 Work out $21 - 5 \times 2$ |

SKILLS CHECK

Score

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René Descartes

Descartes is considered the father of modern philosophy, a key figure in the scientific revolution of the 17th Century, and a pioneer of modern mathematics.

Many people also call him the father of analytic geometry, which connects the fields of algebra and geometry.

Maths Challenges...

Miss Allen's favourite number is also the "Golden Ratio"

Can you solve all the Maths challenges?
They get more difficult as you get them..

Connor has five times as much money as Jayden.

Connor gives some money to Jayden.

They now have £8.52 each.

How much did Connor have at the start?

80 people take part in a race.

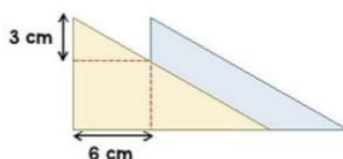
- The ratio of children to adults in the race is **2:3**.
- The mean time for the adults is **2 minutes 15 seconds**.
- The mean time for all 80 people is **3 minutes**.

Find the mean time for the children.

Here are two triangles identical in size.



The two triangles are overlapped.



What is the area of the blue triangle showing?

Cross Number...

USE THE QUESTIONS BELOW TO COMPLETE THE CROSS NUMBER.

| | | | | | | | | |
|----|----|----|----|----|----|----|----|----|
| 1 | 2 | | | 3 | 4 | | 5 | 6 |
| 2 | 1 | | | | | | | |
| 7 | | | | 8 | | | 9 | |
| | | | 10 | | | 11 | | |
| | | 12 | | | | 13 | 14 | |
| 15 | 16 | | | 17 | 18 | | 19 | 20 |
| 22 | | | | 23 | | | 24 | |
| | | 25 | 26 | | | 27 | | |
| | 28 | | 29 | 30 | 31 | | | 32 |
| 33 | | | | 34 | | | 35 | 36 |
| 37 | | | | 38 | | | | 39 |

ACROSS

- The number of spots on a standard dice (2)
- The largest two-digit multiple of 13 (2)
- One more than 8 ACROSS (2)
- One quarter of the square of 6 DOWN (3)
- $2 \times 2 \times 2 \times 2 \times 2$ (2)
- A cube number (3)
- $15 \text{ ACROSS} + 3 \text{ DOWN} + 6 \text{ DOWN} + 21 \text{ DOWN} + 36 \text{ DOWN}$ (4)
- $39 \text{ ACROSS} - 33 \text{ DOWN}$ (2)
- Twice (1 ACROSS + 1 DOWN) (2)
- $1 \text{ DOWN} \times 38 \text{ ACROSS}$ (3)
- $36 \text{ DOWN} - 8 \text{ ACROSS}$ (2)
- A square number (3)
- The smallest three-digit square number with all its digits different (3)
- $1 \text{ ACROSS} + 6 \text{ DOWN}$ (2)
- A multiple of 4 DOWN (3)
- $27 \text{ ACROSS} + 37 \text{ ACROSS}$ (2)
- $39 \text{ ACROSS} + 1 \text{ DOWN}$ (2)
- $200 \times 12 \text{ ACROSS} + 27 \text{ DOWN}$ (4)
- 10 times 2 dozen (3)
- A square of a square number (2)
- $5 \times 1 \text{ ACROSS} +$ one-seventh of 12 ACROSS (3)
- A half of 8 ACROSS (2)
- A cube number (2)
- One less than 6 DOWN (2)

DOWN

- A prime number (2)
- The sum of the first ten prime numbers (3)
- The number of hours in 39 days (3)
- $2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2$ (3)
- $22 \text{ ACROSS} + 28 \text{ DOWN}$ (3)
- The number of minutes in three-fifths of an hour (2)
- A multiple of 7 (2)
- $3 \times 37 \text{ ACROSS}$ (2)
- $(22 \text{ ACROSS} - 6 \text{ DOWN}) \times 9$ (4)
- A number all of whose digits are the same (4)
- A prime number (2)
- $27 \text{ ACROSS} - 8 \text{ ACROSS}$ (2)
- A multiple of 9 (2)
- A prime number (2)
- A square number (2)
- The square of a square number (2)
- $3 \times 12 \text{ ACROSS}$ (2)
- Two-thirds of 36 DOWN (2)
- $22 \text{ ACROSS} - 1 \text{ DOWN}$ (3)
- $1 \text{ ACROSS} \times 26 \text{ DOWN}$ (3)
- $25 \text{ ACROSS} + 4 \text{ DOWN} + 5 \text{ DOWN}$ (3)
- $17 \text{ DOWN} + 27 \text{ ACROSS}$ (3)
- The sum of the digits of 1 DOWN, 17 ACROSS and 17 DOWN (2)
- One and a half times 27 DOWN (2)