## (3) Highcliffe School <br> Maths challenge



## Everyone can have a go

## Some of you may find these difficult

 Most of you will find these difficult


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## BROREN BALGULATOR

Use the keys on this broken calculator to make the totals from one to

## Mr Alesh

 ten. Five has already been done as an example.

| $1=$ |
| :--- |
| $2=$ |
| $3=$ |
| $4=$ |
| $5=3 \times 4-3-4$ |
| $6=$ |
| $7=$ |
| $8=$ |
| $9=$ |
| $10=$ |



Complete the following using all of the numbers

$$
1,2,3,4,5,6
$$

## Mrs Kelly

to find the smallest odd number


Arrange the numbers 1 to 9 inside the square below.

The sum of each row and column must be equal to 15.

## Mr Riley




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Each row and column contains all the digits 1 to 4 .

| 4 |  |  | 3 |
| :--- | :--- | :--- | :--- |
| 3 | 1 |  |  |
| 2 |  |  | 1 |
|  |  | 2 |  |

## Mrs Brace




How many triangles can you see.....?

## Mr Wallace



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## Maths challenge

## Maze

Start with zero.
Find a route from 'Start' to 'End' that totals 100 exactly.

Mr Moore


Which route has the highest total?
Which has the lowest total?
Now try some different starting numbers.

## Sighcliffe School <br> Maths challenge



Mr Hooper


## (3) Highcliffe School

## Maths challenge

A clumsy snail fell into a well and is now stuck at the bottom. The well is 30 m deep, to escape the snail must climb its way up the slippery walls of the well.
In one day the snail can climb 3 m up the well. It is hard work and takes the snail all day. It then needs a good nights sleep, the only problem is that when it is sleeping it slides 2 m back down the wall.
The snail keeps up this routine of climbing $3 m$ each day then sliding back 2 m each night.
How many days does it take the snail to escape from the well?

Think: How could you convince someone else that your

## Mr Cooper

 answer is correct? Can you think of your own version of the problem?

## (3) Highcliffe School Maths challenge

| 3 | 2 |  | 4 |  | 5 | 6 | 1 | 8 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | 7 | 6 |  |  |  |  |  |  |
| 8 | 5 |  |  | 6 |  | 3 |  |  |
|  |  | 2 | 5 |  | 3 |  | 9 |  |
|  |  |  |  | 9 |  |  |  |  |
|  | 3 |  | 7 |  | 6 | 5 |  |  |
|  |  | 7 |  | 3 |  |  | 6 | 1 |
|  |  |  |  |  | 2 | 4 |  |  |
| 2 | 1 | 3 | 6 |  | 9 |  | 7 | 5 |

The classic Sudoku game involves a grid of 81 squares. The grid is divided into nine blocks, each containing nine squares. The rules of the game are simple: each of the nine blocks has to contain all the numbers 1-9 within its squares. Each number can only appear once in a row, column or box.

## Mrs Chipchase



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Make 6
You can only use two maths symbols (including factorials and square roots) to make 6
$000=6$
$111=6$
$222=6$
$333=6$
$444=6$
$555=6$
$666=6$
$777=6$
$888=6$
$999=6$

## Mr McLeish



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## Mrs Alldis-Smith

A man has brought 81 rubies to a gemologist for valuation. The rubies are all the same size, but the man knows that one of them is a fake and weighs slightly more than the real rubies.


Using this information, how can the gemologist identify the fake ruby using a pair of scales by making just four weighings?

## (3) Highcliffe School Maths challenge

Four copies of the triangle shown are joined together, without gaps or overlaps, to make a parallelogram. What is the largest possible perimeter of the parallelogram?

A 46 cm B 52 cm C 58 cm D 62 cm E 76 cm

Mr Lose


