




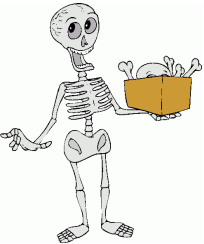


# Halloween harder

## Mini Murder Mystery

### Who

These are the 6 suspects in a murder. Each has a favourite number under 800 which they have described. Work out these 6 numbers and put them in ascending order. The character in 3<sup>rd</sup> position murdered the character in 4<sup>th</sup> position.

Identify the murderer and the victim.

<p style="text-align: center;"><b>GHOST</b></p> <p>My favourite number is a square number. It's odd. It's less than 400 but more than the witch's number.</p> 	<p style="text-align: center;"><b>BLACK CAT</b></p> <p>My favourite number is a square. It's also odd and the sum of its 3 digits is 18.</p> 	<p style="text-align: center;"><b>WIZARD</b></p> <p>My favourite number is a perfect cube and the sum of its 3 digits is a multiple of 3. It is less than 300.</p> 
<p style="text-align: center;"><b>SKELETON</b></p> <p>My favourite number is a power of 2 and the sum of its 3 digits is a prime number. If you divide my number by 4 the result is a square number which is also a cube number. Wow!</p> 	<p style="text-align: center;"><b>WITCH</b></p> <p>My favourite number is less than 500 and it's an odd cube number. It's greater than the skeleton's favourite number.</p> 	<p style="text-align: center;"><b>WISE OWL</b></p> <p>My favourite number is a power of 2 and a cube number and the sum of its digits is also a power of 2.</p> 

### When

In the year 2010 Hallowe'en (31<sup>st</sup> Oct) was on a Sunday.

In which year will it next fall on a Sunday ?

Match the correct year to the time the murder was committed

2021	When Hell froze over
2020	At the first stroke of midnight
2017	At the witching hour
2016	When the cat came home

### Where

Solve the following long calculation using the rules of BIDMAS. (The final answer is an integer). Then match the answer to the place where the murder was committed.

$$5 + 2(\sqrt{36} - 1^3) + \frac{8^2}{4} - (15 - \sqrt{49})$$

43.....In the graveyard



31.....In a haunted house



23..... In a spooky dungeon



19..... In a tall rickety tower



### Why

Calculate the following decimals and fractions then use your answers to decode the murders message.

B	C	E	I
$3.7 - 1.9$	Half of 3.8	$\frac{3}{4} + 0.25$	$\frac{1}{8} - 0.005$
K	M	O	R
$9 - 3.6$	$\frac{5}{8}$ of 0.8	$3.104 - 1.094$	3 tenths as a decimal
S	T	Y	
A third of 2.7	$0.6 \times 0.4$	$2 \div 0.5$	

0.12	0.24	1.8	0.3	2.01
5.4	1	0.5	4	1.8
0.3	2.01	2.01	0.5	0.9
0.24	0.12	1.9	5.4	

### Final Accusation

\_\_\_\_\_ murdered \_\_\_\_\_  
 In (where) \_\_\_\_\_ at (when) \_\_\_\_\_  
 Because (why) \_\_\_\_\_

