

Mini murder mystery

Multiples, factors, primes, powers, roots

One of these 6 people has murdered one of the others. Each has made 4 statements about the following list of numbers.

The murderer has made 3 errors. The victim has made 0 errors.

The other suspects have made 1 or 2 errors.

5, 8, 13, 16, 21, 38, 49,
52, 61, 64, 72

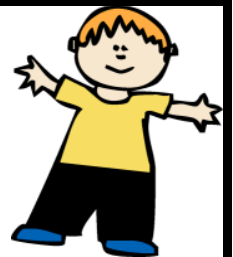
Chloe says

- There are 5 odd numbers
- There are 2 square numbers
- There are 2 multiples of 7
- The lowest prime number in the list is 13



Phil said

- There are 3 primes
- The difference between the 1st 2 odd numbers in the list is 8
- There are 6 even numbers
- There are 3 factors of 64 in the list



Pauline says

- There are 2 cubes in the list
- There are 2 multiples of 9 in the list
- The largest gap between numbers is 9.
- The answer to 2^5 is in the list



Carl says

- The answer to $\sqrt{121}$ is in the list
- There are 2 multiples of 13 in the list
- There are 4 square numbers
- There are 4 multiples of 8



Miss Lune says

- 2^4 is in the list
- $\sqrt{169}$ is in the list
- There are no factors of 18 in the list
- The product of the 2 lowest odd numbers is 63



Geoff says

- There are 2 cubes in the list
- 2^6 is in the list
- $\sqrt{81}$ is in the list
- There are no multiples of 12



Where

The murder was committed in a Midlands town near to Birmingham.



It was Wolverhampton if there are 3 prime numbers in the 20's

It was Kidderminster if there are 4 multiples of 30 between 100 and 200

It was Nuneaton if there are 9 factors of 36

It was Walsall if there are 5 perfect square numbers between 50 and 150

When.

Calculate the time and date from these

(eg hours answer =17 minutes part =28 gives a time of 17:28

The hour part of the time is the answer to	$\sqrt{16} \times (4^2 - \sqrt{121})$
The minute part of the time is the answer to	3^3
The day part of the date is	The factors of 8 added together
The month part of the date is	The 3 rd multiple of 4
The year part of the date is	$(10^3 \times \sqrt{4}) + \sqrt{100}$

Why

a	b	c	d	e
4^2	$\sqrt{100}$	$1^2 + 1^3$	$10^2 \div 4$	$3^2 - \sqrt{4}$
f	g	h	i	j
Next prime after 13	1 st prime no in the 20's	$3 + 3^2$	5 th prime number	2 nd prime x 4 th prime
k	l	m	n	o
LCM of 2 & 7	2^2	$\sqrt{169}$	1^{10}	2^3
p	q	r	s	t
HCF of 30 & 45	$5^2 - 1^2$	Cube root of 125	$\sqrt{400}$	$\sqrt{9}$
u	v	w	x	y or z
$\sqrt{36}$	$\sqrt{81}$	$4^2 + 1^2 + 1^2 + 1^2$	9 th multiple of 2	$5^2 - \sqrt{9}$

12	7	25	8	7	20	1	3	14	1
8	19	12	8	19	3	8	20	24	6
16	5	7	16	1	6	13	10	7	5