

Murder Mystery 2

At 9am, when the maid knocked on the door of Lady Bilkington's room in the Hiltraffles Hotel, there was no reply. She had asked for breakfast in bed and a few minutes later, the manager opened the door. Lady Bilkington was lying dead in her bed. Beside her was a half drunk cup of cocoa which smelt rather odd. Later tests revealed this was poisoned. Her jewellery case containing the Bilkington diamonds was empty.

The waitress who had served the evening cocoa was nowhere to be seen. Her body was found in her room – she had been shot. The police were now looking for the mastermind behind this and the diamonds. The waitress, not entirely trusting the mastermind had left hidden in her room, 6 clues in code. The first five give helpful facts about the murderer and the 6th clue reveals where the diamonds are.

There are 32 suspects. Each clue eliminates half of the suspects.

Can you find the murderer and the place where the diamonds are hidden?

Number	Forename	Surname	Sex	Freckles	Right / Left	Pet	Motorbike	Guilty?
1	Fred	Dunstone	M	Yes	R	none	Yes	
2	Mary	Pearson	F	Yes	R	hamster	Yes	
3	Sophie	Beckles	F	No	R	horse	Yes	
4	Anne	Smith	F	No	L	dog	Yes	
5	Jim	Jones	M	No	R	cobra	Yes	
6	Lizzie	Rogers	F	Yes	L	donkey	Yes	
7	Egbert	Williams	M	Yes	L	dog	Yes	
8	Sam	Cheadle	M	No	L	rat	Yes	
9	Beth	Lubbock	F	No	R	spider	Yes	
10	Abdirahman	Mustafa	M	Yes	R	crocodile	Yes	
11	Grace	Pinder	F	Yes	R	terrapiin	Yes	
12	Simon	Robinson	M	No	L	praying mantis	Yes	
13	Saskia	Walker	F	No	L	goldfish	Yes	
14	Orla	Minstrel	F	Yes	L	tortoise	Yes	
15	Harry	Pitcher	M	Yes	L	snail	Yes	
16	Tom	Maynard	M	No	R	pony	No	
17	James	Wren	M	Yes	L	cat	No	
18	Ruth	Jameson	F	No	R	poodle	No	
19	Becky	Sands	F	Yes	R	mouse	No	
20	Amina	Khan	F	No	L	parrot	No	
21	India	Fisher	F	Yes	L	gerbil	No	
22	Ian	Dent	M	No	L	cockroach	No	
23	John	Begler	M	Yes	R	ferret	No	
24	Gavin	Redrup	M	No	R	viper	No	
25	Jake	Griggle	M	Yes	L	butterfly	No	
26	Courtney	Pinkles	F	No	R	stick insect	No	
27	Faisal	Iqbal	M	No	R	rattle snake	No	
28	Marion	Machin	F	Yes	R	snail	No	
29	Tim	Smithers	M	Yes	R	alligator	No	
30	Safia	Obed	F	No	L	python	No	
31	Ella	Woller	F	Yes	L	turtle	No	
32	Dennis	Winter	M	No	L	spaniel	Yes	

Clue 1 - Calculate M for Murder.

In this cipher, A=1, B=2 etc. Can you work out the value of m in each of these?

1) $m + 10 = 30$

2) $3m = 24$

3) $m + 14 = 19$

4) $m - 4 = 12$

5) $m + 10 = 25$

6) $4m = 36$

7) $m - 11 = 8$

8) $m + 6 = 21$

9) $m \div 2 = 7$

10) $8m = 40$

11) $m \div 3 = 6$

12) $2m + 4 = 20$

13) $10m = 10$

14) $m + 6 = 25$

15) $2m + 2 = 30$

16) $m \div 5 = 3$

17) $3m - 3 = 15$

18) $m \div 2 = 9$

19) $20m = 100$

20) $9m - 2 = 25$

21) $3m + 7 = 40$

22) $3m = 36$

23) $m - 5 = 0$

24) $m + 9 = 28$

Clue 2 – The Mirror Cracked from Side to Side

“There’s a pleasing symmetry about this code,” remarked the Inspector after many hours puzzling.

“How does it work?” inquired Smith, his assistant.

“You start looking through the letters for one with 1 line of symmetry,” he explained. “When you have found one, you then carry on till you find one with 2 lines of symmetry and then another with one line and so on.”

“What has 8 lines?” asked Smith.

“She can’t have been really good at Maths – it means O but there’s a lot more than 8 really.”

“Better not drop my mirror while I’m working this out!”

121110

Z	T	S	R	H	P	Q	E	F	J	M	N	U	W	X	R

110102

I	J	D	S	E	Y	W	R	Q	P	E	C	A	R	T	I

0180110

E	S	C	G	A	O	I	E	L	O	L	D	B	I	E	L

88111020

E	O	A	O	F	R	D	E	P	D	L	W	D	I	K	J

112120011

Q	E	T	S	P	H	E	F	P	I	R	M	P	J	E	T

Clue 3 - Solve in Sequence

In this cipher, A=1, B=2 etc. Can you work out the value of m in each of these?

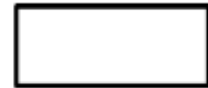
- 1) m 40 60 80
- 2) 2 4 6 m
- 3) 35 25 15 m
- 4) 19 17 15 m
- 5) 7 14 m 28
- 6) 12 13 15 m
- 7) 1 m 9 16
- 8) 2 3 m 7 11
- 9) -6 0 6 12 m
- 10) 0 1 1 2 3 m
- 11) 48 38 28 m
- 12) 6 m 12 15 18
- 13) 7 11 13 17 m
- 14) 3 6 m 24 48
- 15) -25 -15 -5 m
- 16) 1 m 11 16
- 17) 10 m 40 80 160
- 18) 68 48 28 m
- 19) m 3 6 10 15
- 20) 112 56 28 m
- 21) 1 2 m 8 16
- 22) 0 m 10 15 20
- 23) 1 m 7 10

Clue 4 – No time for inaction – sort out the fraction!

In this cipher, A=1, B=2 etc.

- 1) $\frac{1}{2}$ of 40
- 2) $\frac{2}{3}$ of 12
- 3) $\frac{1}{5}$ of 25
- 4) $\frac{1}{8}$ of 88
- 5) $\frac{3}{4}$ of 12
- 6) $\frac{2}{3}$ of 18
- 7) $\frac{1}{4}$ of 48
- 8) $\frac{1}{8}$ of 40
- 9) $\frac{2}{3}$ of 27
- 10) $\frac{3}{8}$ of 48
- 11) $\frac{3}{5}$ of 15
- 12) $\frac{1}{6}$ of 24
- 13) $\frac{1}{3}$ of 15
- 14) $\frac{1}{2}$ of 38
- 15) $\frac{1}{8}$ of 8
- 16) $\frac{1}{5}$ of 65
- 17) $\frac{3}{4}$ of 20
- 18) $\frac{5}{8}$ of 32
- 19) $\frac{1}{3}$ of 45
- 20) $\frac{3}{5}$ of 30
- 21) $\frac{1}{8}$ of 16
- 22) $\frac{3}{8}$ of 24
- 23) $\frac{1}{4}$ of 44
- 24) $\frac{1}{6}$ of 30

Clue 5 – It's all in a rectangle.



TDLHULECBMAOUTYRESDDSEACRTHEAORNNOEAL

"I know this one," chirped Smithkins. "You have to put the letters into a rectangle going down each column starting with the left hand column.

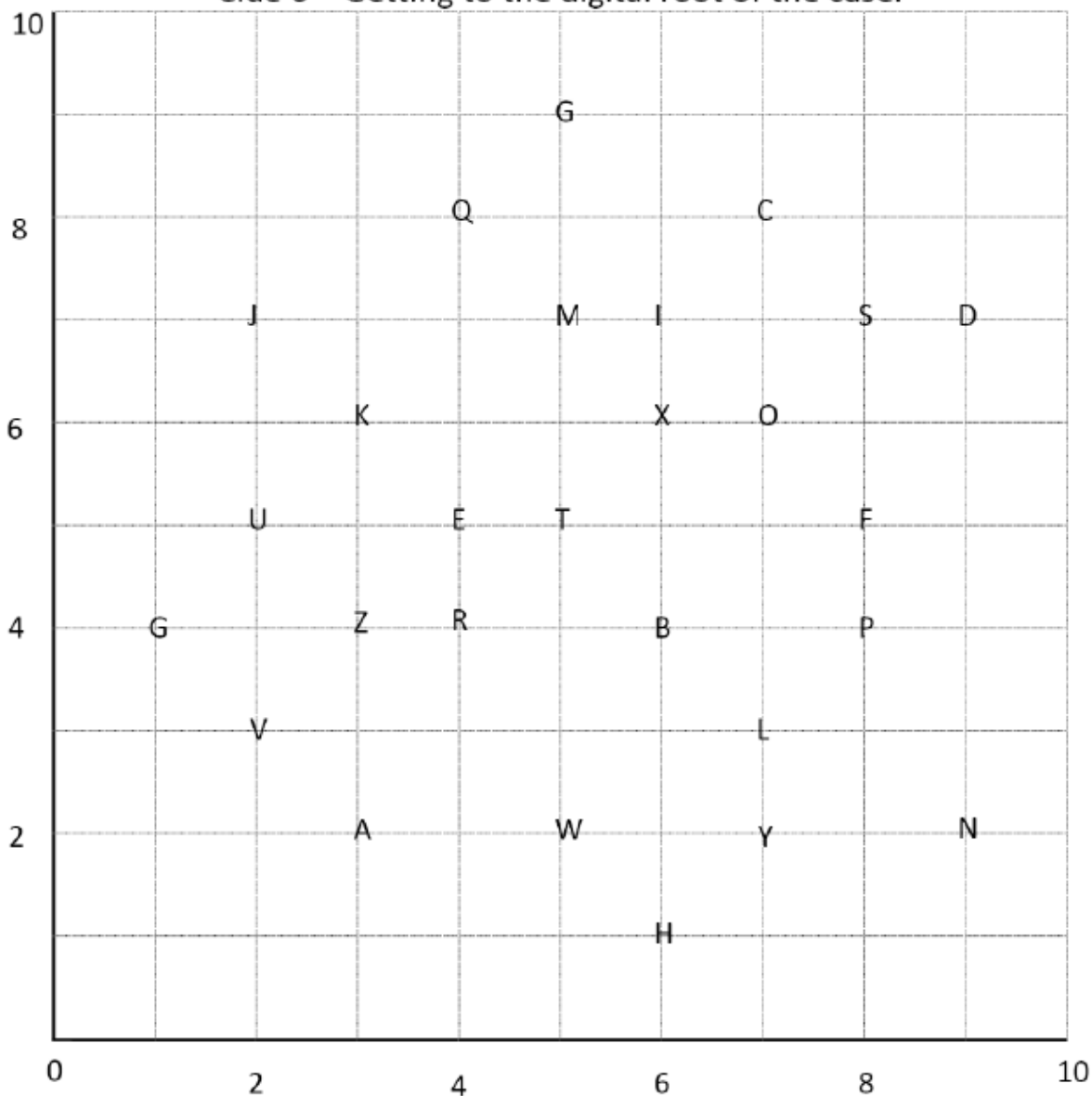
For example MSRAIETSAHGT has 12 letters and if you put it into a 3 x 4 column, look what happens!"

M	A	T	H
S	I	S	G
R	E	A	T

"Oh I see," exclaimed the Inspector. "You read it from left to right starting at the top – what a message! But the secret message has 36 letters so what size rectangle will we need?"

"I'm not sure," replied Smithkins. "We need some squared paper."

Clue 6 – Getting to the digital root of the case.



(45,52) (15,34) (21,11) (41,61) (43,33) (72,101) (36,70) (53,205)

(33,502) (333,101) (221,1112) (331,222) (114,331) (322,111)

(211,221) (311,41) (97,89) (555,484) (557,961) (338,734)

(445,455) (922,841) (6624,1325)

“Those numbers are way off the scale, they can’t possibly be connected,” observed Smithkins.

“Ah,” countered the Inspector. “You need to find the digital root of each number first – you add the digits”

“But what happens if the answer is more than 9?”

“You keep adding until you get down to 1 digit.”

“So the digital root of 46 is $4 + 6 = 10$ then $1 + 0 = 1$?”

“Yes”