

## Clue 1 Turn up the Volume

Fill in the gaps in this table to find the message.

Length cm	Width cm	Height cm	Volume cm <sup>3</sup>	Letter
13	2	1	26	M
9	4	3	108	I
19	2	2	76	S
14	3	2	84	N
15	5	1	75	O
5	2	2	20	T
7	5	1	35	A
8	6	2	96	B
9	3	3	81	I
7	4	2	56	G
6	6	2	72	F
13	3	1	39	A
14	2	2	56	N
5	3	1	15	O
6	5	2	60	F
20	4	2	160	T
8	3	2	48	H
3	2	3	18	R
9	3	2	54	I
3	2	2	12	L
12	4	3	144	L
5	5	4	100	E
18	2	2	72	R
19	2	5	190	S

## Clue 2 - Raising the bar

Have you ever wondered what librarians do when there is no one else around? In this library, they race - pushing a trolley of books. The circuit weaves a figure of eight around the children's books, delicately touches the Romance section, hastily scurries past the Horror section before finishing next to the thrillers. One second is added on for every book which falls off the trolley.

To crack this clue, plot a bar chart of the times of the different librarians.

Name	Time (secs)	Books dropped	Adjusted time
Kate	35	3	38
Freda	22	4	26
Mary	17	9	26
Bill	15	13	28
Horace	15	1	16
Oliver	18	12	30
Wendy	17	17	34
Max	19	5	24
Sally	13	1	14

To solve this clue you must:

- A) Arrange the names of the librarians in alphabetical order starting from the origin.
- B) Use a scale which makes best use of the space available.
- C) The word below the top of each bar is part of the clue.
- D) You will need to rearrange the 9 words to make a sentence.
- E) Although it won't help with the clue, label each axis and give the chart a heading!

Answer: **Killer has a library card number divisible by three**

Bar chart of librarians' race times



### Clue 3 Decimal System

Calculate the  $\times$  or  $\div$ . Add the digits in the tens, units and tenths positions.

Decode the number. eg

	Answer	Number	Letter
$14450 \div 100$	144.5	13	M
$4.620 \times 100$	462.0	8	H
$21.005 \times 10$	210.05	1	A
$8676.24 \div 10$	867.624	19	S
$1.09324 \times 1000$	1093.24	14	N
$102.124 \times 10$	1021.24	5	E
$99454.2 \div 1000$	99.4542	22	V
$0.23019 \times 100$	23.019	5	E
$123.774 \times 100$	12377.4	18	R
$0.18864 \times 1000$	188.64	22	V
$16.234 \times 100$	1623.4	9	I
$55901 \div 1000$	55.901	19	S
$6.4126 \times 1000$	6412.6	9	I
$47679.3 \div 100$	476.793	20	T
$0.5001 \times 100$	50.01	5	E
$354112 \div 10$	35411.2	4	D
$14.6862 \times 100$	1468.62	20	T
$8.22410 \times 100$	822.41	8	H
$0.422174 \times 1000$	422.174	5	E
$0.005117 \times 10000$	51.17	7	G
$2304.17 \div 100$	23.0417	5	E
$554.21 \div 10$	55.421	14	N
$0.848417 \times 100$	84.8417	20	T
$1.88321 \times 100$	188.321	19	S

### Clue 4 Brackets

Work out where the brackets should go to make each number sentence correct. The numbers in the brackets give the code.

eg  $5 \times 3 + 2 = 25$

$5 \times (3 + 2) = 25$

$3 + 2 = 5 = e$

	Numbers within brackets	Letter
$(6 + 7) \times 2 = 26$	13	M
$3 \times (30 - 7) = 69$	23	W
$\frac{2 \times (6 - 5)}{4} = \frac{1}{2}$	1	A
$2 \times (26 - 7) = 38$	19	S
$(10 + 4) \div 2 = 7$	14	N
$\frac{2+4}{2 \times (9+6)} = \frac{1}{5}$	15	O
$(3 + 7 + 10) \times 2 = 40$	20	T
$3 \times (4 - 2) = 6$	2	B
$40 \div (2 + 3) = 8$	5	E
$(5 + 5 + 9) \times 2 = 38$	18	S
$2 \times (9 + 7) = 32$	16	P
$9 \times (2 + 2 + 1) = 45$	5	E
$7 \times (2 + 1) = 21$	3	C
$3 + 5 \times (10 + 10) = 103$	20	T
$2 \times (9 - 8) \times 3 = 6$	1	A
$(12 - 9) \div 2 = 1.5$	3	C
$\frac{3 \times (10 + 2)}{18} = 2$	12	L
$(20 - 15) \times 12 = 60$	5	E
$9 \times (2 + 1 + 1) = 36$	4	D

## Clue 5 – Find the missing corner

To solve this clue, plot the co-ordinates given and then find the co-ordinates of the missing corner. Use this to find a word from the word table. Rearrange the 7 words you get to make a sentence. No shapes overlap. Draw the shapes in order. All co-ordinates are whole numbers.

Shape 1 - square (0,8) (2,10) (2,6) (4,8)

Shape 2 - rectangle (0,4) (1,5) (3,3) (2,2)

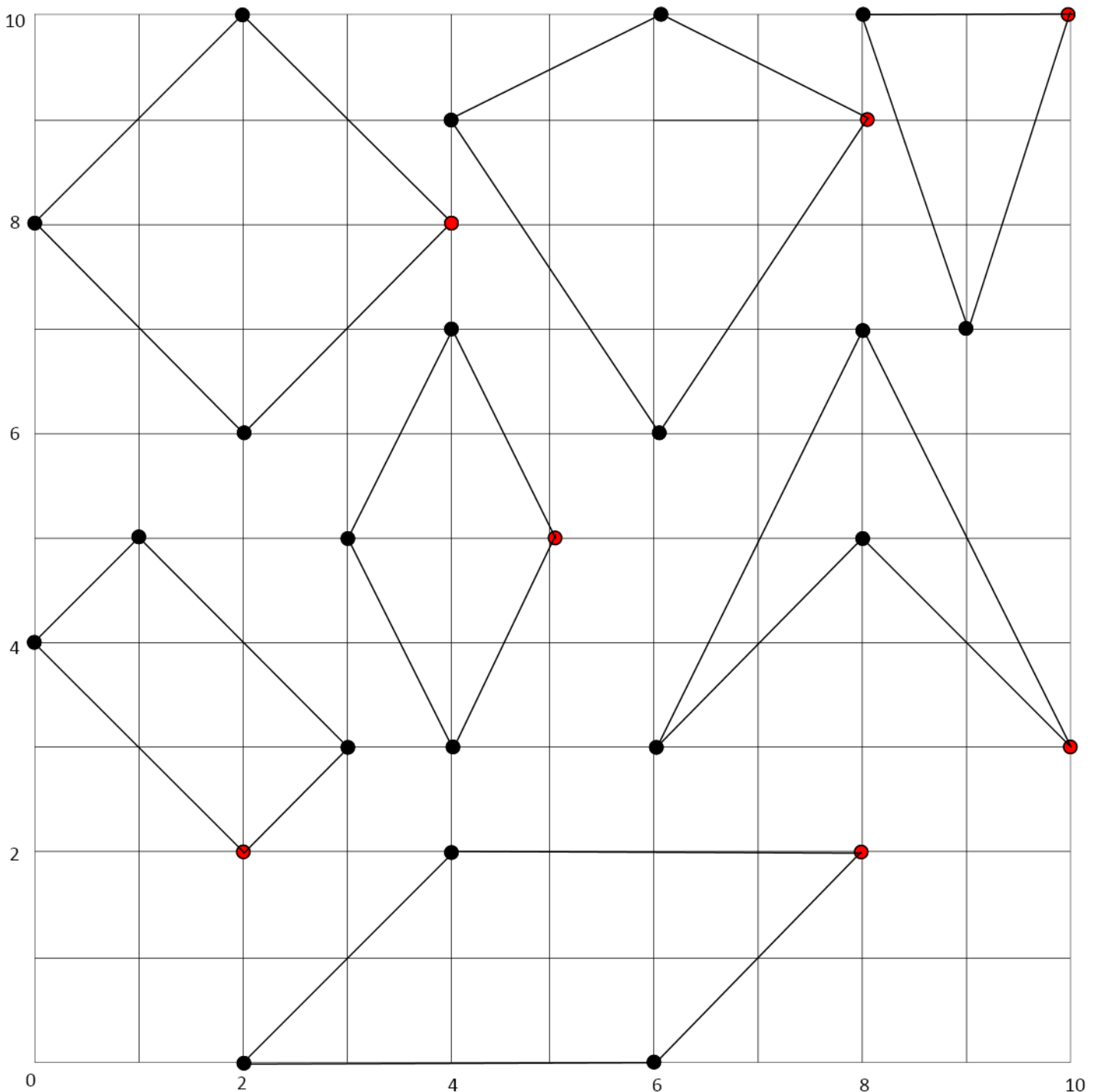
Shape 3 - kite (4,9) (6,10) (6,6) (8,9)

Shape 4 - isosceles triangle (8,10) (9,7) (10,10)

Shape 5 - rhombus (4,3) (3,5) (4,7) (5,5)

Shape 6 - parallelogram (2,0) (4,2) (6,0) (8,2)

Shape 7 - kite (6,3) (8,5) (8,7) (10,3)



10	book	library	man	woman	author	thriller	Coke	Pepsi	tea	drink
9	coffee	mug	glass	trolley	sometimes	fine	quiet	Killer's	book	card
8	overdue	race	open	usually	hot	cool	holiday	activity	poetry	reference
7	fiction	geography	biography	big	books	cook	breakfast	toilet	DVD	rent
6	crime	horror	romance	family	action	detective	cup	milk	smoothie	water
5	lemonade	beer	fizzy	wine	is	whisky	alcohol	sip	Ovaltine	Horlicks
4	Nesquik	Tang	tree	leek	plum	chicken	divide	one	six	eight
3	four	dead	alive	police	catch	criminal	prison	7 Up	sun	cold
2	not	favourite	like	help	staff	librarian	Tango	served	Sprite	sell
1	can	solve	crime	dial	999	finger	print	cell	locked	up
	1	2	3	4	5	6	7	8	9	10

Killer's favourite drink is usually served cold.

This should give Danielle Denouement as the killer.