INE: DO NOT CROSSPOLICE LINE: DO NOT CROSSPOLICE LINE: DO NOT CROSS POLICE LINE: I

You have arrived to your Stats lesson to discover a murder has taken place!

Solve the Statistical problems using the skills we have been practicing this year to decipher the clues left by the murderer.

After you have worked out each clue, use it to eliminate teachers from the suspect list and find the next clue.

Can you solve the murder before the lesson is over?

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Suspect List

Teacher	Subject	Sex	Right/Left-Handed	Free Period
Mr Wills	Maths	₩	Right	2
Mrs Jassal	<u>English</u>	F	Left	3
Mr Armstrong	P.E	M	Right	3
Mr Patel	History	M	Right	2
Miss Nowak	Maths	F	Left	3
Mrs Crisp	Statistics	F	Left	2
Ms Wilson	<u>English</u>	F	Left	2
Mr Guest	Maths	M	Left	2
Mr Dogaru	Maths	M	Right	3
Miss Trier	Art	F	Right	3
Miss Rogers	P.E	F	Right	2
Mrs Halford	Maths	F	Right	3
Mr Brownhill	Statistics	M	Left	3
Mr Hartlebury	<u>English</u>	M	Left	3
Mr Plant	French	M	Left	2
Miss Goodyear	Maths	F	Right	2

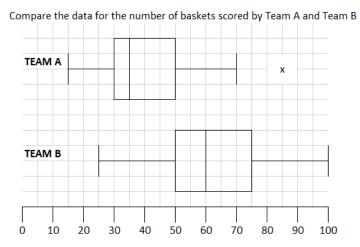
Murderer: Mr Guest

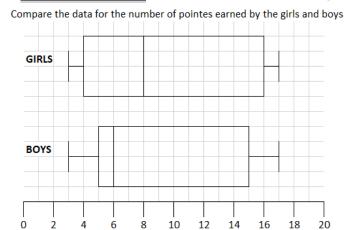
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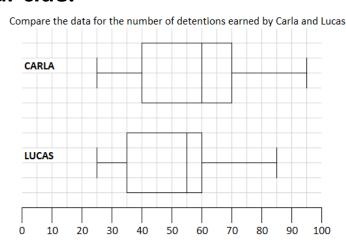
INE: DO NOT CROSSPOLICE LINE: DO NOT CROSSPOLICE LINE: DO NOT CROSS POLICE LINE: D

Work out the missing words from these comparisons for box plots.

The letter <u>highlighted</u> is the letter for your clue.







S: The range for TEAM B is wider THAN Team A

A: The M E D I A N for Team B is higher than Team A

Sk: Team A and Team B have positive S K E W

I: On average, Team B score more baskets

A: Team A has an OUTLIER

S: Boys have a S M A L L E R inter Q U A R T I L E range

A: Girls HAVE a HIGHER MEDIAN

Sk: GIRLS and BOYShave POSITIVE skew

I: On average, Girls score more POINTS

A: No O U T L I E R S

S: Carla has a WIDER range than LUCAS

A: CARLA has A higher median than LUCAS

Sk: CARLA and LUCAS have negative skew

I: LUCAS has a less VARIED number of DETENTIONS

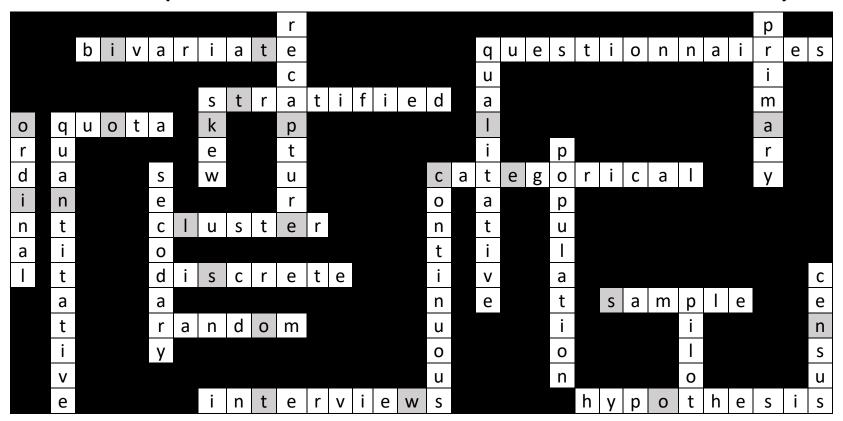
A: NO OUTLIERS

CLUE: the killer dropped a calculator (only staff who would need a calculator [maths and stats])

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Use the clues to complete the crossword. The letter in the shaded box is the letter for your clue.



CLUE: it took place in lesson two (only staff who were free period 2 are suspects)

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For each of these sets of data calculate the standard deviation.

Round this to the nearest whole number and use the codebreaker to decipher the clue.

Α	١	В	С	D	Е	F	G	Н		J	K	L	М	N	0	Р	Q	R	S	Т	U	V	W	Χ	Υ	Z
1	L	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26

$n = 13 \sum (x - \bar{x})^2 = 837.5$	$ \begin{array}{c} $			$ \begin{array}{c} $	$n = 36$ $\sum (x - \bar{x})^2 = 12854.3$		
8.03 = H	5.00 = E	23.01 = W	1.03 = A	18.55 = S	18.90 = S		
$\sum_{n=101}^{n=101} x = 84$ $\sum_{n=101}^{n=101} x^2 = 3041$	$\sum_{n=69}^{n=69} x = 32$ $\sum_{n=69}^{n=69} x^2 = 2061$	$\sum_{x=61}^{n=25} x = 61$ $\sum_{x=5374}^{n=25} x^2 = 5374$	$\sum_{n=6}^{n=6} x = 18$ $\sum_{n=6}^{\infty} x^2 = 3174$	$\sum_{n=29}^{n=29} x = 22$ $\sum_{n=29}^{n=29} x^2 = 674$	$\sum_{x=14}^{n=42} x = 14$ $\sum_{x=14}^{n=42} x^2 = 83$		
5.42 = E	5.45 = E	14.46 = N	22.80 = W	4.76 = E	1.37 = A		
17, 25, 53, 42, 3	3,30,8,14,7,2	131 , 174 , 147 , 152 , 160	25,34,28,14	1.3, 0.9, 2.5, 0.7, 0.1, 0.8	30, 26, 15, 67, 42		
17.75 = R	9.48 = I	14.22 = N	7.26 = G	0.74 = A	17.74 = R		
X 5 10 15 f 34 7 22	X 0 5 10 f 6 5 16	X 3 13 23 f 5 5 8	X 0 1 2 f 8 4 7	X 25 50 75 f 30 37 30			
4.61 = E	4.12 = D	8.33= H	0.89 = A	19.66 = T			

CLUE: he was seen wearing a red hat (only male staff are suspects)

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For each pair of data, rank them ready for calculating SRCC. Use the codebreaker to find the letter represented by each shaded rank.

АВ	C D	Е	F	G	Н		I I K		K L		N	OP		Q	R	R S		T U		W	Х		Z	
	1.5 2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8	8.5	9	+		10.5	11	11.5			12.5 13	
	I							· · · · · · · · · · · · · · · · · · ·		5		1				I	1							
Х	12		4		11		6		7		13			10		14		5 2.5	8		14		9	
	Rank X 10		1	9		4			5		11			8		12.5			6		12.5		7	
	Y 21		24	22		25		23		24	24			26		17		16	19		20		18	
Rank Y	7	1	10.5		3	12	?	6		10.5	5	2.5		13		2.5		1	5	5	6		4	
Α	A 29 27 49		9	25		48		24		32	32			10		38	38		16		16			
Rank A	7		6	1	3	5		12		4		8		11		1		9.5	9.5		2.5		2.5	
В	70		75	3	5	62	2	66		58		39		39		30		45	49		59		56	
Rank B	12	-	13	2	2 10)	11		8		3.5	5 3.5			1		5		5	9		7	
М	26		6	22 9			6		2		16		15		18		12		6	20		10		
Rank M	12.5	2	2.5	1	1	4		2.5		1		8		7		9		6		.5	10		5	
F	9	:	11	2	9	13	3	9	9 5		5		15 23			19		13		7	26		13	
Rank F	2.5		4	1	3	6		2.5	i	1		8 10		10		9		6		2	11		6	
Α	15	:	20	1	9	26	5	20		28		25		25		26		10	1	0	12		15	
Rank A	4.5	7	7.5	6	5	11.	5	7.5	;	13		9.5		9.5	11.5			1.5	1.5		3		4.5	
В	12	:	15	6	ō	16	5	7		12		17		10		9		1		2	3		4	
Rank B	9.5	-	11	5	5	12	2	6	6 9.		'	13		8		7		1	2		3	4		
Α	20	3	33	2	1	34	1	22	22			30		23		29		24		8	25	31		
Rank A	1		12	2	2	13	3	3	3			9		4		8		5	7		6		10	
В	25	:	14	2	6	28	3	29		15		16		23		19		22		5	21		18	
Rank B	9.5		1	1	1	12	2	13		2		3		8	5			7		5	6		4	

CLUE: they used green yellow scissors (only staff who are left-handed are suspects)

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