Qu 2	Scheme	Marks	AO
(a)	Negative	B1 **(1)**	1.2
(b)	Marc's suggestion <u>is compatible</u> because it's <u>negative correlation</u>	B1 **(1)**	2.4
(c)	$(r =)$ – 0.54458266… awrt **<u>– 0.545</u>**	B1 **(1)**	1.1b
(d)	$H_0 : \rho = 0$ $H_1 : \rho < 0$	B1	2.5
	[5% 1-tail cv =] (<u>+</u>) 0.4259	M1	1.1a
	(significant result / reject H_0) There <u>is</u> evidence of negative <u>correlation</u> between the <u>number of letters</u> in (or <u>length</u> of) a student's last <u>name</u> and their first <u>name</u>	A1 **(3)**	2.2b
		(6 marks)	

	Notes
(a)	B1 for "negative" Allow "slight" or "weak" etc Allow a description e.g. "as x increases y decreases" or in context e.g. "people with longer last names tend to have shorter first names" A comment of "negative skew" is B0 **Need to see distinct or separate responses for (a) and (b)**
(b)	B1 for a comment that suggests data is compatible with the suggestion **and** a suitable reason such as "there is negative correlation" <u>or</u> a description in x and y or in context <u>or</u> the points lie close to a line with <u>negative gradient</u> <u>or</u> draw line $y = x$ and state that <u>more points below the line</u> so <u>supports (or is compatible with)</u> his suggestion A reason based on just a **single point** is B0 e.g. " 11 letters in last name has only 5 in first name"
(c)	B1 for awrt – 0.545
(d)	B1 for both hypotheses correct in terms of ρ M1 for a critical value compatible with their H_1: 1-tail: awrt <u>+</u> 0.426 (condone <u>+</u> 0.425) **or** 2-tail (B0 scored for H_1) : awrt <u>+</u> 0.497 If hypotheses are in words and can deduce whether one or two-tail then use their words. If no hypotheses or their H_1 is not clearly one or two tail assume one-tail A1 for compatible signs between cv and r **and** a correct conclusion in context mentioning <u>correlation</u> and <u>number of letters</u> or <u>length</u> and <u>name</u> (ft their value from (c)) Do NOT award this A mark if contradictory comments or working seen e.g. "accept H_0" or comparison of 0.426 with significance level of 0.05 etc
NB	The M1A1 can be scored independently of the hypotheses