

Question	Scheme	Marks	AOs
4(a)	Systematic (sampling)	B1	1.2
		(1)	
4(b)	The (Daily Total) <u>Rain</u> fall data may contain “ <u>tr</u> ” entries (these will need a suitable value substituted before calculations can take place.)	B1	2.4
		(1)	
4(c)(i)	mm/h (o.e.) e.g. mm h^{-1} <u>or</u> mm hrs^{-1} <u>or</u> $\frac{\text{mm}}{\text{hours}}$	B1	1.1b
	(ii) When there is <u>no sun</u> (shine) there is (on average) 0.7(41) (mm) <u>of rain</u> <u>or</u> the amount of <u>rain</u> when there is <u>no sun</u> (shine) (o.e.)	B1	2.4
		(2)	
4(d)	e.g. Not consistent (since); Kay’s line says <u>positive</u> correlation <u>or</u> gradient <u>or</u> regression coefficient <u>or</u> regression line <u>or</u> 0.199 is <u>positive</u>	B1	2.4
		(1)	
4(e)	$H_0 : \rho = 0$ and $H_1 : \rho < 0$	B1	2.5
	[p -value < 5% so significant result] there is evidence to <u>support the teacher’s claim</u>	B1	2.2b
		(2)	
4(f)(i)	The sample is <u>rain</u> fall (y) and <u>sun</u> shine (x) for <u>May~Oct</u> in (Leeming) in <u>2015</u>	B1	1.1b
	(ii) e.g. (rainfall and sunshine) for: (Leeming) for all of 2015, <u>or</u> Leeming anytime (not just May~Oct) <u>or</u> Leeming for May~October for other years too <u>or</u> May ~Oct in UK etc	B1	3.3
		(2)	

(9 marks)

Notes:

(a)	B1	for systematic (ignore other non-contradictory descriptions). Condone misspelling. If a clear choice is given e.g. stratified or systematic we take the final answer.
(b)	B1	for mention of “ <u>tr</u> ” or “trace” entries in <u>rain</u> (fall) [or y] data. Ignore “n/a”. Ignore any comment about what to do with trace.
(c)(i)	B1	for mm/h or equivalent in words.
	B1	for the idea of amount of <u>rain</u> when <u>no sun</u> . “Minimum rain” is B0 Don’t need value or units but if given must be correct or consistent with (i)
(d)	B1	for a suitable reason and saying <u>not</u> consistent (o.e.) e.g. “false” or “untrue” or “no” Reason only needs to be about the line and may be a description e.g. as x increases y increases <u>or</u> at least 2 values of x substituted and y values evaluated
(e)	B1	for both hypotheses correct in terms of ρ (condone attempt at ρ that looks like p)
	B1	for a correct conclusion in context with no contradiction. Using words “ <u>support</u> ” and “ <u>teacher’s claim</u> ” or “ <u>negative correlation</u> ” and “ <u>sun</u> or <u>x</u> ” and “ <u>rain</u> or <u>y</u> ” [If a comparison is given it must be $0.015 < 0.05$]
(f)(i)	B1	for recognising that all the data/days for <u>these variables</u> in <u>LDS</u> for <u>2015</u> is the sample. Condone omitting “Leeming” B0 for “sunshine and rainfall for Leeming in 2015” It could be the population.
	B1	for a suitable attempt to describe a population. The teacher’s sample must be a subset.