

Question	Scheme	Marks	AOs
1(a)	Greatest <u>distance</u> at which an object can be <u>seen</u> (and recognised in daylight)	B1	1.2
	11 000 m or 11 km (or 1100 dam – accept 1100 Dm)	B1	1.2
		(2)	
(b)	(−1.035 is not possible as) must have $-1 \leq r (\leq 1)$	B1	2.4
		(1)	
(c)	−0.757	B1	1.1b
		(1)	
(d)	$H_0: \rho = 0 \quad H_1: \rho \neq 0$	B1	2.5
	cv = (±) 0.7067	M1ft	1.1b
	(−0.757 < −0.7067 so in critical region, reject H_0 and accept H_1) Sufficient evidence of correlation between (Daily Maximum Relative) Humidity and (Daily Mean) Visibility (so supports Jen’s belief).	A1	2.2b
		(3)	
(e)	May not be correct due to, any two from: • May differ at other times / sample only considered October/2015 • May differ in other locations • Sample was not representative • Even under H_0, there is a 5% chance the test result is not correct Condone may not be a causal relationship	B1 B1	3.5b 3.5b
		(2)	
(9 marks)			
Notes:			
(a)	B1: correct interpretation of visibility B1: correct (interpretation of) units		
(b)	B1: correct reasoning		
(c)	B1: allow awrt −0.757 (calculator gives −0.757383...) Check for answer identified in the given list.		
(d)	B1: must be in terms of ρ (Accept one-tail with $H_1: \rho < 0$) M1: ft on their H_1 (1 tail cv would be −0.6215) A1: correct conclusion in context		
(e)	B1: any one equivalent reason from given options B1: a second equivalent reason from given options - allow each bullet once only		