Qu 2	Scheme	Marks	AO
(a)	$H_0 : \rho = 0$ $H_1 : \rho < 0$	B1	2.5
	Critical value: $- 0.6215$ (Allow any cv in range $0.5 < |cv| < 0.75$)	M1	1.1a
	$r < - 0.6215$ so significant result and there is evidence of a negative correlation between w and t	A1	2.2b
		(3)	
(b)	e.g. As temperature increases people spend more time on the beach and less time shopping (o.e.)	B1	2.4
		(1)	
(c)	Since r is close to $- 1$, it **is** consistent with the suggestion	B1	2.4
		(1)	
(d)	t will be the explanatory variable since sales are likely to depend on the temperature	B1	2.4
		(1)	
(e)	Every degree rise in temperature leads to a drop in weekly earnings of £171	B1	3.4
		(1)	
		(7 marks)	
	Notes		
(a)	B1 for both hypotheses in terms of ρ		
	M1 for the critical value: sight of ± 0.6215 or any cv such that $0.5 < |cv| < 0.75$		
	A1 must reject H_0 on basis of comparing $- 0.915$ with $- 0.6215$ (if $- 0.915 < 0.6215$ is seen then A0 but may use $|r|$ o.e. which is fine) <u>and</u> mention "negative", "correlation/relationship" and at least "w" and "t"		

(b)	B1 for a suitable <u>reason to explain</u> negative correlation using the context given.
	     e.g. "As temperature drops people are more likely to go shopping (than to the beach)"
	     e.g. "As temperature increases people will be outside rather than in shops"
	      A mere description in context of negative correlation is B0
	 SO e.g. "As temperature increases people don't want to go shopping/buy clothes" is B0
	     e.g. "Less clothes needed as temp increases" is B0		

(c)	B1 for a suitable reason e.g. "strong"/"significant"/"near perfect" "correlation", $|r|$ close to 1 <u>and</u> saying it is consistent with the suggestion. Allow "yes" followed by the reason.		

(d)	B1 For identifying t <u>and</u> giving a suitable reason.
	     Need idea that "w <u>depends</u> on t" <u>or</u> "w <u>responds</u> to t" <u>or</u> "t <u>affects</u> w" (o.e.)
	     Allow t (temperature) <u>affects</u> the other variable etc
	     Just saying " t is the independent variable" <u>or</u> "t <u>explains</u> change in w" is B0
	      N. B. Suggesting causation is B0 e.g. "t causes w to decrease"		

(e)	B1 for a description that conveys the idea of rate per degree Celsius. Must have 171, condone missing "£" sign.		