Question Number	Scheme	Marks
6 (a)	$\frac{3.968-\mu}{\sigma}=-1.2816$ or $\frac{4.026-\mu}{\sigma}=1.0364$	M1A1A1
	$\mu-1.2816\sigma=3.968$ (Calc: $-1.28155156\ldots$)	
	$\mu+1.0364\sigma=4.026$ (Calc: $1.03643338\ldots$)	
	$2.318\sigma=0.058$	dM1
	$\sigma=0.0250\ldots$ $\mu=4.00....$ awrt **0.025 and 4**	A1
		(5)
(b)	Q_3 = awrt 30.3 (calc: $30.337\ldots$) or Q_3-Q_1 = awrt 0.6 oe (calc: 0.6744...)	B1
	$30.3+1.5("30.3"-29.7)[=31.2]$ or $29.7-1.5("30.3"-29.7)[=28.8]$	M1
	$P(L>"31.2")=P\left(Z>\frac{"31.2"-30}{0.5}\right)$ or $P(L<"28.8")=P\left(Z<\frac{"28.8"-30}{0.5}\right)$	M1
	$=0.0082$	
	Probability it is an outlier $=2\times0.0082$	M1
	$=0.0164$ answer in range **(0.006~0.017)**	A1
		(5)
		Total 10

	Notes
(a)	1st M1 for standardising with μ and σ and forming an equation in μ and σ with $\lvert z\rvert>1$ 1st A1 for one correct equation in any form with z value as given or better 2nd A1 for a 2nd correct equation in any form allow 2dp or better for the z value 2nd dM1 (dep on 1st M1) for correct method to solve* their 2 linear, simultaneous equations. Can be implied by both correct answers. [*Must see correct substitution or correct addition/subtraction of all 3 terms] 2nd A1 for both $\mu=$ awrt 4 and $\sigma=$ awrt 0.025 [Check it follows from their working.] NB Could score M1A0A1M1A1 or M1A1A0M1A1 here
(b)	B1 awrt 30.3 or IQR = awrt 0.6 or awrt 0.67 1st M1 correct method for finding 1 outlier limit – ft their Q_3 or their IQR 2nd M1 standardising with their limit, 30 and 0.5 allow $\pm$ leading to a probability < 0.05 Can be implied by a correct probability statement e.g. P(L < 28.8) = 0.0082 3rd M1 multiplying their probability by 2 (or adding their two probs both < 0.05) A1 (dependent on all 3 M marks) for an answer in the range 0.006 ~ 0.017
Calc	**Use of full calc values:** If they use a calculator the lower limit is 28.651…upper limit is 31.3489 and probability comes to $2\times0.00348835...$ = awrt 0.00698