Qu	Scheme	Marks	AO
4 (a)	$\bar{x} = 10.2\,(2222\ldots)$ $\qquad$ awrt **10.2**	B1 (1)	1.1b
(b)	$\sigma_x = 3.17\,(20227\ldots)$ $\qquad$ awrt **3.17** $\quad$ Sight of $\qquad$ "knots" <u>or</u> "kn" $\quad$ (condone knots/s etc)	B1ft B1 (2)	1.1b 1.2
(c)	October ….. since it is windier in the autumn <u>or</u> month of the hurricane <u>or</u> $\qquad\qquad\qquad\qquad$ latest month in the year	B1 B1 (2)	2.2b 2.4
(d)(i)	They represent <u>outliers</u>	B1	1.2
(ii)	Y has low median so expect lowish mean (but outlier so > 7) <u>and</u> Y has big range/IQR or spread so expect larger st.dev Suggests B	M1 A1 (3)	2.4 2.2b
		(8 marks)	

	Notes
NB	$\bar{x} = \dfrac{184}{18}$ $\quad$ and $\quad$ $\sigma_x = \sqrt{\dfrac{2062}{18} - \bar{x}^2}$
(a)	B1 $\quad$ for $\bar{x} = 10.2$ $\quad$ (allow exact fraction)
(b)	1st B1ft allow 3.2 from a correct expr' accept $s = 3.26(3984\ldots)$ $\quad$ [ft use of n/a] <u>Treating n/a as 0</u> May see $n = 31$ or $\bar{x} = 5.9354...$ which is B0 in (a) but here in $\qquad$ (b) it gives $\sigma_x = 5.59(34\ldots)$ or $s = 5.6858\ldots$(awrt 5.69) and scores 1st B1 2nd B1 accept kn accept in (a) or (b) (allow nautical miles/hour)
(c)	1st B1 choosing October but accept September. 2nd B1 for stating that (Camborne) is windier in autumn/winter months $\quad$ "because it is winter/autumn/windier/colder in "month" " Sep $\leqslant$ "month" $\leqslant$ Mar $\quad$ scores B1B1 for "month" = Sep or Oct and B0B1 for other months in range
(d)(i)	B1 for outlier or the idea of an extreme value allow "anomaly"
(ii)	M1 for a comment relating to location that mentions both median and mean <u>and</u> a comment relating to <u>spread</u> that mentions both range/IQR and standard deviation and leads to choosing B, C or D

ALT	**Choosing A or E is M0** Incorrect/false statements score M0 e.g. $Q_3 = $ (mean $+ \sigma$) or identify $Q_2 = $ mean or Y has small spread **Use of outliers:** outlier is (mean $+ 3\sigma$) ($B = 19.9$), ($C = 18.95$), ($D = 20.2$) Must <u>see</u> at least one of these values and compare to Y's outlier[leads to D or B] A1 for suitable inference i.e. B (accept D <u>or</u> B or D) M1 **must** be scored