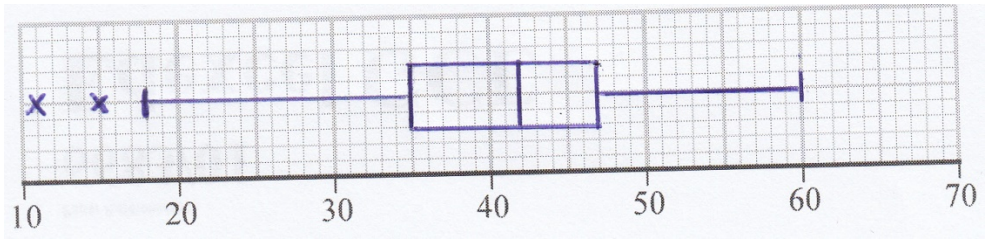
Question Number	Scheme	Marks
2. (a)(i)	[IQR = 47 – 33 =] **14**	B1
(ii)	[Range = 54 – 11 =] **43**	B1 (2)
(b)	e.g. $Q_2 - Q_1 (=9) > (5=) Q_3 - Q_2$	M1
	Therefore negative (skew)	A1 (2)
(c)	$25 \rightarrow 37 \Rightarrow$ new $Q_1 = 35$ (may be on box plot)	B1
	[$54 \rightarrow 60$ (implies upper whisker now at 60) but no change to Q_3]	
	New IQR = 12 so need to re-calculate for outliers	M1
	Outliers now [> 47 + 18 = 65 or] < 35 – 18 = 17	A1
	Box Plot 	
	Box and two whiskers with median still at 42	M1
	Lower quartile at their 35 ($\neq 33$) and upper quartile unchanged at 47	A1ft
	Two outliers at 11 and 15	A1
	Lower whisker at 18 (or 17) and upper whisker at 60	A1 (7)
(d)	The value of pmcc is small or weak correlation (o.e.)	M1
	Therefore the complaint is not supported	A1 (2)
		[13]

	Notes
(a)(i)	1st B1 for 14 2nd B1 for 43
(b)	M1 for a suitable reason or calculation (allow longer whisker on left etc) A1 for negative skew (dep on M1 seen) "left skew" etc is A0 [Condone incorrect "9" or "5"]
(c)	B1 for new lower quartile at 35 (stated or on box plot) 1st M1 for finding the new IQR (< 14) and attempting to re-calculate for outliers 1st A1 for at least the correct lower limit of 17 seen 2nd M1 for drawing a box with only two whiskers and median at 42 (all points ± 0.5 square) 2nd A1ft for lower quartile of "35" (changed from 33) and upper quartile unchanged at 47 3rd A1 for only two outliers at 11 and 15 (no overlap with whisker) 4th A1 for lower whisker ending at 18 (or 17) and upper whisker ending at 60 Correct box plot scores all except 1st M1A1 (i.e. 5/7) this M1A1 requires some working
(d)	M1 for comment that pmcc is "small" so little correlation (just saying < 0 is not enough) Allow e.g. "not significant" or "not relevant" or $-0.5 < r < 0.5$ or "not close to – 1 " but "no correlation" is M0 A1 for suggesting the complaint is not supported e.g. "little evidence to support claim" Dep on M1 seen NB M1A0 is possible