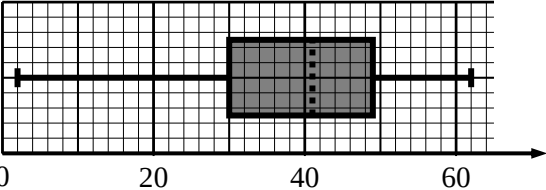


Question		Answer	Mark	AO	Guidance
8	(a)	Median = 41 Quartiles = 30, 49 	B1 B1 B1FT B1 [4]	1.1 1.1 1.2 1.2	Stated or shown on diagram (need not be labelled) Stated or shown on diagram (need not be labelled) Correct diagram, FT their median & quartiles & correct end points shown (2,62) – all correct to +/-0.5 (Must see a box with a vertical line and two whiskers) An appropriate linear scale, consistently labelled. (This mark can only be awarded if a box-and-whisker plot is drawn)
8	(b)	Using $Q_1 - 1.5 \times IQR$ or $Q_3 + 1.5 \times IQR$ $30 - 1.5 \times (49 - 30) = 1.5$ AND $49 + 1.5 \times (49 - 30) = 77.5$ So no (lower) outliers and no (upper) outliers	M1 A1 A1	1.1 1.1 2.3	Attempting to calculate either with their quartiles (may be implied by 1.5 or 77.5) Must see both correct calculations or both 1.5 and 77.5 www (so must be from correct calculations) Accept a single statement of ‘no outliers’ following correct calculations oe e.g. ‘no heights should be ignored’
		Alternative using mean and sd: $\mu \pm 2\sigma = 37.7 \pm 2 \times 16.0$ $\mu + 2\sigma = 69.6$ (3sf) Hence no (upper) outliers $\mu - 2\sigma = 5.83$ (3sf) Hence one (lower) outlier (2)	M1 A1 A1 [3]		Calculating either $\mu \pm 2\sigma$ with sensible values $\mu \in [35,40]$ $\sigma \in [14,19]$ Must see correct calculation or value and statement Must see correct calculation or value and statement