

Q	Marking Instructions	AO	Mark	Typical Solution
12(a)	Calculates correct value of mean (accept 161)	1.1b	B1	$\bar{x} = 160.6$ $sd = 6.8$ $160.6 - 2 \times 6.8 = 147$ $146 < 147$ Hence Ann is an outlier
	Calculates correct value of standard deviation (accept 7.2 or better)	1.1b	B1	
	Uses their \bar{x} and their $s.d$ in $\bar{x} - 2 \times s.d$ (accept 146.2)	1.1b	M1	
	Compares 146 with their calculation and correctly concludes that Ann's height is an outlier FT their \bar{x} and their $s.d$	2.1	R1F	
12(b)	States correctly that the mean would increase with a valid reason or increases to 162.2 Accept the mean would increase as the lower/lowest value has been removed or other valid reason	2.2b	B1	The mean would increase because Ann's height is less than the mean Standard deviation would decrease because Ann's height is an outlier
	States correctly that the standard deviation would decrease with a valid reason or decreases to 5.03 Accept the standard deviation would decrease because the data is less spread out or other valid reason	2.2b	B1	
	Total		6	