Note: Normally in regression equations you need to give b to a high degree of accuracy, because when you use it to estimate values, it is going to be multiplied by values of the independant variable before being added to a. In this case, because b is so small in comparison to a, you might be able to get away with just 3 s.f for each, and then give your final answe to 2 s.f.

(e) The temperature decreases by about 0.015°C for each 1m increase in height. ✓

Note that the question asked you to "interpret the value of b". If they had asked you to "interpret b", the answer should be something like: "b is the increase in temperature, in °C, for each metre of increase in height." (It's negative because the temperature decreases!)

Saying b is the decrease in temperature is clearly wrong – as b is negative, that would mean the temperature would increase with height!

(f) Difference = $|b| \times |1000 - 500|$

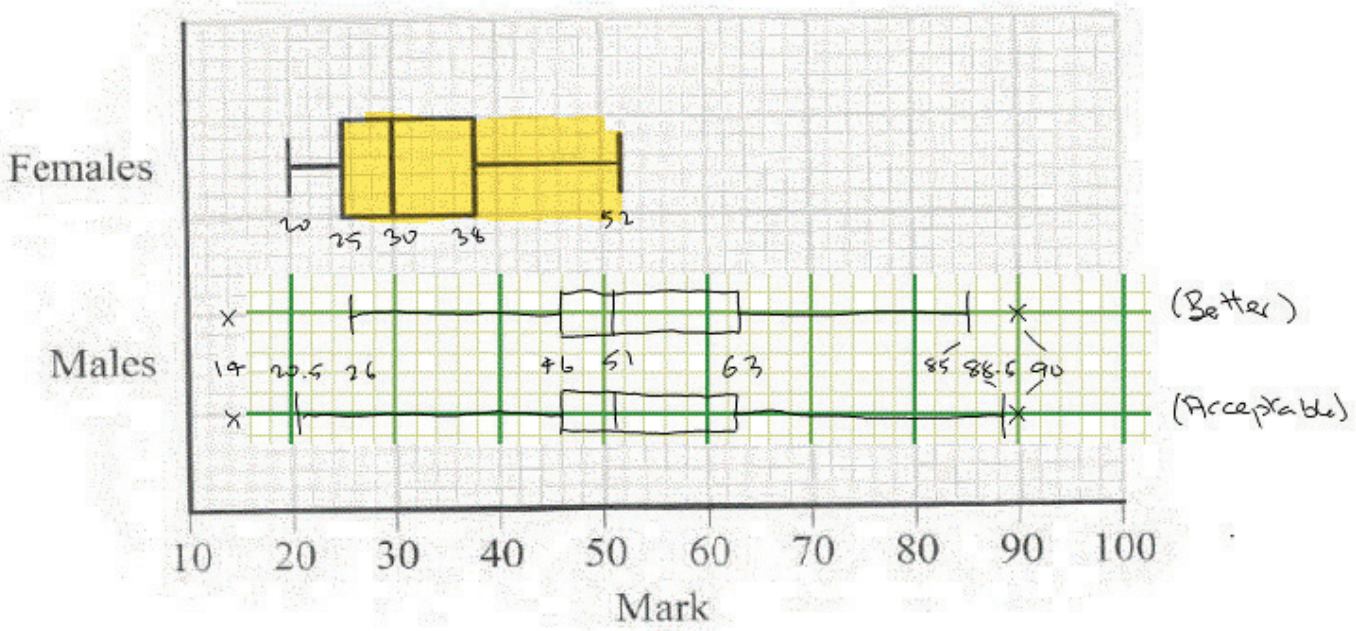
$= 500 \times 0.015027196185083078757171596751 36$

$= 7.513598092541539378585798375 68 = 7.5°$ to 2 s.f (ANS)

✓

(Q2) Wow! I wouldn't dare construct such a sexist question!

(a) 25 (The 75% is shaded yellow below) ✓



(b)

Mark	(2|6 means 26)	Totals	cf
1	4	(1)	1
2	6	(1)	2
3	447	(3)	5
4	06(6)778	(6)	11
5	0011(3)677	(9)	20
6	223(5)38	(6)	26
7	008	(3)	29
8	5	(1)	30
9	0	(1)	31

$n = 31$, so $\frac{n}{2} = 15.5$

$Q_2 = a_{16} = 51$ (ANS) ✓

$\frac{n}{4} = 7.75$, so $Q_1 = a_8 = 46$ ✓

$\frac{3n}{4} = 23.25$, so $Q_3 = a_{24} = 63$ ✓

$IQR = 63 - 46 = 17$ (ANS) ✓

(c) $F_1 = Q_1 - 1.5\ IQR = 46 - 1.5 \times 17$

$= 20.5$ ✓

(So 14 is an outlier, 26 is not)

$F_2 = Q_3 + 1.5 \times IQR = 63 + 1.5 \times 17 = 88.5$ ✓

(So 90 is an outlier and 85 is not)

These mechanical tests for outliers that Edexcel so likes using are really silly. Looking at the stem and leaf diagram, it is patently obvious that 14 and 90 are not <u>real</u> outliers, i.e. values that should be excluded from the data because they