

Question	Scheme	Marks	AOs
5(a)	$P_{95} = 0.95 \times 184 = 174.8$ P_{95} lies in $20 \leq t < 25.5$	B1	1.1b
	$P_{95} = 20 + 5.5 \times \frac{174.8 - 167}{184 - 167}$	M1	1.1b
	$P_{95} = 22.5235...$ awrt 22.5	A1	1.1b
	90% interpercentile range = '22.5'-8.92 awrt 13.6	B1ft	1.1b
		(4)	
(b)	$\frac{52}{k - 14.5} = 2.08 \times 10$	M1	1.1b
	$k = 17$	A1cao	1.1b
		(2)	
(c)	Any of: <ul style="list-style-type: none"> LDS <u>only covers May-Oct</u> so <u>misses warmest months</u> LDS does <u>not cover summer</u> in Perth/southern hemisphere Or equivalent	B1	3.5b
	More than \bar{t}	dB1	1.1b
		(2)	

(8 marks)

Notes:		
(a)	B1:	Correctly finding which element is the P_{95} and indicating that it lies in the $20 \leq t < 25.5$ class
	M1:	Correct method for finding the P_{95} (they may work back from 25.5)
	A1:	awrt 22.5 (from correct working)
	B1ft:	For subtracting 8.92 from their P_{95}
(b)	M1:	Correct method to find k
	A1cao:	$k = 17$, cao
(c)	B1:	Correct reason conveying understanding that the LDS does not cover the warmest months for Perth.
	dB1:	(dep on B1) Stating actual mean would be expected to be more than \bar{t}