Qu. No.	Scheme	Marks
3(a)	Width = 2.5 (cm)	B1
	Height = $\left(\frac{35}{15}\times 6\right)\div "2.5"$ or $\frac{4}{5}\times 7$ or $6cm^2 = 15$ (logs) or $14cm^2 = 35$ (logs) oe	M1
	= 5.6 (cm)	A1
		(3)
(b)	Median $= [20] + \frac{25}{35}\times 5$ allow $[20] + \frac{25.5}{35}\times 5$	M1
	= 23.57… allow 23.64…. awrt 23.6	A1
		(2)
(c)	19 + 35 + 8 (= 62*) **or** 88 – 3 – 15 – 8 (= 62*)	B1cso*
		(1)
(d)	P(4 logs fit) = $\left(\frac{62}{88}\right)\times\left(\frac{61}{87}\right)\times\left(\frac{60}{86}\right)\times\left(\frac{59}{85}\right)$	M1
	= 0.23922…. awrt 0.239	A1
		(2)
(e)(i)	mean of $y = \frac{924}{88}[=10.5]$	M1
	mean of $w = ("10.5" + 255)\times 2$	M1
	= 531	A1
		(3)
(ii)	variance of $y = \frac{12862}{88} - ("10.5")^2 [= 35.909...]$	M1
	variance of $w = "35.909"\times 4$ or $"35.909"\div 0.5^2$	M1
	= 143.636… awrt 144	A1
		(3)

Notes — **Total 14**

(a)	**B1**	2.5 oe
	M1	Correct method to relate area to number of logs (may be implied by "their *w*" × "their *h*" = 14)
	A1	5.6 oe
(b)	**M1**	For a correct fraction multiplied by 5. Allow working downwards e.g. $[25] - \frac{10}{35}\times 5$
	A1	Correct answer from correct working. Allow exact fraction.
(c)	**B1**	A correct calculation seen. Allow $\frac{1}{2}(16)$ for 8. Allow equivalent methods $\frac{x-54}{70-54} = \frac{26-25}{27-25}$ Minimum working required 54 + 8 or 70 – 8 or $\frac{54+70}{2}$ NB: 26 + *x* = 88 → *x* = 62 is B0.
(d)	**M1**	For $\left(\frac{n}{88}\right)\times\left(\frac{n-1}{87}\right)\times\left(\frac{n-2}{86}\right)\times\left(\frac{n-3}{85}\right)$ (allow any $n < 88$)
	A1	awrt 0.239
	SC	With replacement awrt 0.246 scores M1A0
(e)(i)	**M1**	Correct method for finding mean of *y* (implied by 10.5) or for equation $0.5\sum w - 88\times 255 = 924$
	M1	Correct method for finding mean of *w* or $\sum w = 46728$ and $\frac{46728}{88}$
	A1	Cao
(ii)	**M1**	Correct method for finding variance of *y* (implied by awrt 35.9) or $0.25\sum w^2 + 255^2\times 88 - 255\sum w = 12862$
	M1	Correct method for finding variance of *w* or $\sum w^2 = 24825208$ and $\frac{24825208}{88} - "531"^2$