

Delta 3 – Unit 4 Revision Answers

Q1.

Paper 5MB1H_01				
Question	Working	Answer	Mark	Notes
(a)		Frequency polygon	2	B2 for fully correct frequency polygon - points plotted at the midpoint (B1 for all points plotted accurately but not joined with straight line segments) or all points plotted accurately and joined with last joined to first to make a polygon or all points at the correct heights and consistently within or at the ends of the intervals and joined (can include joining last to first to make a polygon) NB: ignore parts of graph drawn to the left of the 1 st point or the right of the last point
(b)		$160 < h \leq 180$	1	B1 for $160 < h \leq 180$ (could be ft from diagram)

Q2.

Question	Working	Answer	Mark	Notes
(a)		1 4 6 8 9 2 1 2 3 5 7 9 3 0 4 6 8 8 4 1 3 6 6 8	3	B2 for correct ordered stem and leaf (B1 for fully correct unordered, or ordered with one error or omission) B1 (indep) for key (units not required but must be correct if stated) eg. $1 \mid 4 = 14$ (marks)
(b)		$\frac{9}{20}$ oe	2	B2 for $\frac{9}{20}$ oe or ft from stem and leaf diagram (B1 for $\frac{x}{20}$ where $x < 20$, $x \neq 9$ or $\frac{9}{y}$ where $y > 9$ or ft from stem and leaf diagram)

Q3.

Question	Working	Answer	Mark	Notes
(a)		365	M1	fx with x consistent within intervals eg 200×1 , 300×11 , 400×5 , 500×0 , 600×3 , if 200, 3300, 2000, 0, 1800 are seen without working then condone 1 error (dep) $\Sigma fx \div \Sigma f$ eg “7300” $\div 20$
(b)		Comment	M1 A1 C1	cao for comment about outliers affecting mean

Q4.

		Working	Answer	Mark	Notes
	(a)	20×12 + 30×27+40×18 + 50× 23+60×10 3520 ÷ 90	39(.11111)	4	M1 for finding at least 4 products fx consistently within interval (including end points) M1 (dep) for use of at least 4 correct midpoints M1 for $\Sigma fx \div 90$ A1 39.(1...)
	(b)		12,39,57,80,90	1	
	(c)			2	B1 cao B1 for at least 4 of "5 points" plotted correctly ± 0.5 full square B1 (dep) for points joined by curve or line segments providing no gradient is negative.
	(d)(i)		36-39	3	(SC: B1 if 4 or 5 points plotted not at end but consistent within each interval and joined) B1 answer within the range 36-39 or ft of graph B2 answer within 19-23 Or M1 for reading off from 50 on a cf graph A1 ft (± 0.5 square)
	(ii)		19-23		

Q5.

5MB1H_01				
Question	Working	Answer	Mark	Notes
(a)		4, 22, 46, 86, 110, 120	1	B1 for all correct
(b)	Graph drawn.	cf graph	2	B1 for 5 or 6 of their points correctly plotted ($\pm 2\text{mm}$) B1 for their points joined by a curve or line segments provided no gradient is negative SC B1 if 5 or 6 points plotted not at the end but consistent within each interval and joined by a curve or line segments provided no gradient is negative
(c)	Read off from cf graph at 36 miles. OR Use table $24+10+\frac{4}{10}\times 40$ $24+10+16=50$ OR $\frac{6}{10}\times 40+46$ $24+46=70$ $120-70=50$	50	2	M1 clear method to read off from cf graph at 36 miles. Can be awarded from their reading $\pm 2\text{mm}$ OR $24+10+\frac{4}{10}\times 40$ OR $120-(\frac{6}{10}\times 40+46)$ A1 ft or answer in the range 48 to 52 (SC B1 for answer in range 68-72 if M0 scored)

Q6.

5MB1H_01				
Question	Working	Answer	Mark	Notes
		two comparisons	2	B1 for one correct complex comparison which summarises the data, with supporting correct numerical values B1 for a different correct complex comparison which summarises the data, with supporting correct numerical values and given in context

Q7.

5MB1H_01				
Question	Working	Answer	Mark	Notes
(a)(i)		11, 22	3	B3 for all of: median 11 drawn, greatest number 22 drawn, smallest number 3 in table, upper quartile 17 in table
(ii)		3, 17		(B2 for 3 correct, B1 for 2 correct)
(b)		45	2	M1 for 0.75×60 or $60 - 0.25 \times 60$ oe or 15 seen (may be seen in diagram) A1 cao

Q8.

5MB1H_01				
Question	Working	Answer	Mark	Notes
(a)	Lowest = 16 LQ = 20 Median = 28 UQ = 42 Highest = 50	Box plot drawn	3	B3 for fully correct box plot (B2 for at least 3 correctly plotted values including box and whiskers/ tails) (B1 for at least 2 correctly plotted values including box or whiskers/tails or 5 correct values plotted and no box or whiskers/tails)
(b)			2	C2 ft for two relevant comparisons one for median/average and one for IQR or range (C1ft for one relevant comparison) ie IQR or range or use of median for comparison

Q9.

	Working	Answer	Mark	Notes
(a)		10 and 18	2	B2 Two correct values (B1 one correct value)
(b)		Bars at heights 3cm and 2cm	2	B2 for two correct bars (B1 for one correct bar)

Q10.

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Question	Working	Answer	Mark	Notes
	Frequency densities of $8 \div 10 = 0.8$ $16 \div 10 = 1.6$ $15 \div 5 = 3$ $12 \div 5 = 2.4$ $6 \div 20 = 0.3$	Fully labelled histogram	3	B3 for fully correct histogram (B2 for 4 correct blocks) (B1 for 3 correct blocks) (If B0 then SC B1 for correct key eg $1\text{cm}^2=2$ birds or frequency $\div$ class interval for at least 3 frequencies) NB apply the same mark scheme if a different frequency density is used

Q11.

Question	Working	Answer	Mark	Notes
		$\frac{61}{118}$	3	P1 for $20 \div 5$ or correct scale on FD axis, or use of area. P1 for correctly method to find area of remaining bars, allow one error A1 for $\frac{61}{118}$ oe