Oxford Revise | Edexcel GCSE Maths Foundation | Answers

Chapter 30 Sampling and averages

Question	Answer	Extra information	Marks
30.1 (a)	Classical		1
30.2 (a)	$\frac{8}{40}\times 180 = 36$ 36 students	$\frac{8}{40}\times 180$ or equivalent calculation Correct answer	1 1
30.2 (b)	Representative, random sample, no bias, etc.	Suitable assumption	1
30.3(a)	152 cm		1
30.3(b)	9 cm		1
30.4 (a)	Mode = 2		1
30.4 (b)	Median = 3.5	Writing the numbers in order, or for $(3+4)\div 2$ Correct answer	1 1
30.4 (c)	The sum of the numbers is 64 The mean is $64 \div 16 = 4$	Add all numbers together and divide by 16 Correct answer	1 1
30.4 (d)	$8 - 1 = 7$		1

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Question	Answer	Extra information	Marks
30.5	$63 \times 10 = 630$ (total of all 10 numbers) $51 \times 4 = 204$ (total of four of the numbers) $630 - 204 = 426$ (total of the six remaining numbers) $426 \div 6 = 71$ The mean of the remaining six numbers is 71	630 or 204 Subtracting 204 from 630 and dividing by 6 Correct answer	1 1 1
30.6 (a)	Table filled correctly with these frequencies: **Score** **Frequency** 1 4 2 2 3 6 4 2 5 3 6 3	1 mark for at most 2 errors Fully correct	1 1
30.6 (b) (i)	3		1
30.6 (b) (ii)	5		1
30.6 (b) (iii)	The value halfway between the 10th and 11th values is 3		1

Question	Answer	Extra information	Marks
30.7 (a)	Missing values from the table: midpoint for $16 < x \leq 24$ is 20 $f \times$ midpoint for $8 < x \leq 16$ is 360 $f \times$ midpoint total is 960	 20 or 360 or 960 Fully correct table	 1 1
30.7 (b)	$0 < x \leq 8$		1
30.7 (c)	Estimated mean length: $\frac{f \times \text{midpoint}}{f} = \frac{960}{100} = 9.6\,\text{cm}$	Dividing the last column by 100 Correct answer	1 1
30.8 (a)	$(71 + 1) \div 2 = 36$ The median is the 36th value. Median class is $30 < t \leq 35$	$(71 + 1) \div 2 = 36$ Correct answer	1 1
30.8 (b)	Add columns to table for Midpoint and $f \times$ midpoint and arrive at a Frequency total of 71 and a $f \times$ midpoint total of 2267.5 Estimate for mean $= 2267.5 \div 71 = 31.93$, or 32 minutes to the nearest minute	Multiplying frequencies by your midpoints Dividing final column total by 71 Correct answer, to the nearest minute	1 1 1
30.8 (c)	You don't know the actual data values, so using the midpoints provides only an estimate.	Clear explanation	1

Question	Answer	Extra information	Marks
30.9	The frequency total is $10y$ Use midpoints of 2 and 6 respectively for the two classes. The $f\times$ midpoint total is $48y$ Estimate for the mean: $\frac{48y}{10y}=4.8$	 Multiplying frequencies by your midpoints Dividing final column total by your frequency total Correct answer	 1 1 1
30.10	24.5 minutes	2 marks for correct answer or 1 mark for 2160 minutes	2
30.11	Angle $ABC=110$ (corresponding angle) Angle sum in isosceles triangle is $x+x+110=180$ Therefor each smaller angle in the triangle is $35°$	 110 and corresponding angles Subtract from 180 and divide by 2 Correct answer	 1 1 1
30.12	51.25%	3 marks for correct answer or 1 mark for 205 1 mark for 160 are blue	3