

# Oxford Revise | AQA GCSE Maths Foundation | Answers

## Chapter 30 Sampling and averages

Question	Answer	Extra information	Marks
30.1 (a)	Quantitative, secondary data	1 mark for each attribute	2
30.1 (b)	Data is out of date		1
30.2 (a) (i)	All students at her school		1
30.2 (a) (ii)	Her five best friends		1
30.2 (b)	Not every student has an equal chance of being selected		1
30.2 (c)	Take a larger sample		1
	Use a random method of selection		1
30.3 (a)	Convenient, inexpensive, quick		1
30.3 (b)	Unreliable		1
30.4 (a)	$\frac{8}{40} \times 180 = 36$	$\frac{8}{40} \times 180$ or equivalent calculation	1
	36 students	Correct answer	1
30.4 (b)	Representative, random sample, no bias, etc.	Suitable assumption	1
30.5	32		1

Question	Answer	Extra information	Marks
30.6 (a)	Mode = 2		1
30.6 (b)	Median = 3.5	Writing the numbers in order, or for $(3+4) \div 2$ Correct answer	1 1
30.6 (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
30.6 (d)	$8 - 1 = 7$		1
30.7	$63 \times 10 = 630$ (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

Question	Answer	Extra information	Marks														
30.8 (a)	<p>Table filled correctly with these frequencies:</p> <table border="1"> <thead> <tr> <th>Score</th> <th>Frequency</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>4</td> </tr> <tr> <td>2</td> <td>2</td> </tr> <tr> <td>3</td> <td>6</td> </tr> <tr> <td>4</td> <td>2</td> </tr> <tr> <td>5</td> <td>3</td> </tr> <tr> <td>6</td> <td>3</td> </tr> </tbody> </table>	Score	Frequency	1	4	2	2	3	6	4	2	5	3	6	3	<p>1 mark for at most 2 errors</p> <p>Fully correct</p>	<p>1</p> <p>1</p>
Score	Frequency																
1	4																
2	2																
3	6																
4	2																
5	3																
6	3																
30.8 (b) (i)	3		1														
30.8 (b) (ii)	5		1														
30.8 (b) (iii)	The value halfway between the 10th and 11th values is 3		1														
30.9 (a)	<p>Missing values from the table:</p> <p>midpoint for <math>16 &lt; x \leq 24</math> is 20</p> <p><math>f \times</math> midpoint for <math>8 &lt; x \leq 16</math> is 360</p> <p><math>f \times</math> midpoint total is 960</p>	<p>20 or 360 or 960</p> <p>Fully correct table</p>	<p>1</p> <p>1</p>														
30.9 (b)	$0 < x \leq 8$		1														

Question	Answer	Extra information	Marks
30.9 (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
30.10 (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
30.10 (b)	Add columns to table for Midpoint and $f \times \text{midpoint}$ and arrive at a Frequency total of 71 and a $f \times \text{midpoint}$ 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
30.10 (c)	You don't know the actual data values, so using the midpoints provides only an estimate.	Clear explanation	1
30.11	The frequency total is $10y$ Use midpoints of 2 and 6 respectively for the two classes. The $f \times \text{midpoint}$ 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

Question	Answer	Extra information	Marks
30.12	Pictogram showing 6 full phone icons for Friday	1 mark for getting the Mon–Thurs total 1 mark for converting symbols to time 1 mark for 6 phones drawn	1 1 1
30.13	Angle $ABC = 110$ (corresponding angle) Angle sum in isosceles triangle is $x + x + 110 = 180$ Therefore each smaller angle in the triangle is $35^\circ$	110 and corresponding angles Subtract from 180 and divide by 2 Correct answer	1 1 1