
GCSE Mathematics

Cumulative Frequency Graphs

Mark Scheme - Higher | Grades 6-7

M = method mark, A = accuracy mark (dependent on the preceding M mark), B = independent mark.

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Edexcel-style questions

Q1 Grade 6 Edexcel style

Total: 2

Part	Mark scheme	Marks
(a)	reads the cumulative frequency at $t = 33$ from the curve	M1
(a)	33 (accept 30 to 36)	A1

Q2 Grade 6 Edexcel style

Total: 2

Part	Mark scheme	Marks
(a)	reads the value at cumulative frequency 40 ($= 80 \div 2$)	M1
(a)	34.5 minutes (accept 32 to 37)	A1

Q3 Grade 6 Edexcel style

Total: 2

Part	Mark scheme	Marks
(a)	reads the value at cumulative frequency 20 ($= 80 \div 4$)	M1
(a)	30 minutes (accept 28 to 32)	A1

Q4 Grade 7 Edexcel style

Total: 4

Part	Mark scheme	Marks
(a)	reads the upper quartile at cumulative frequency 60 ($= 80 \times \frac{3}{4}$): 39.5 minutes	M1
(a)	reads the lower quartile at cumulative frequency 20 ($= 80 \div 4$): 30 minutes	M1
(a)	$IQR = 39.5 - 30$	M1
(a)	9.5 minutes (accept 7 to 12)	A1

Q5 Grade 7 Edexcel style

Total: 4

Part	Mark scheme	Marks
(a)	reads the cumulative frequency at $t = 33$: 33	M1
(a)	reads the cumulative frequency at $t = 42$: 68	M1
(a)	$68 - 33$	M1
(a)	35 (accept 30 to 40)	A1

AQA-style questions

Q6 Grade 6 AQA style

Total: 2

Part	Mark scheme	Marks
(a)	reads the cumulative frequency at $m = 25$ from the curve	M1
(a)	36 (accept 32 to 40)	A1

Q7 Grade 6 AQA style

Total: 2

Part	Mark scheme	Marks
(a)	reads the value at cumulative frequency 40 ($= 80 \div 2$)	M1
(a)	£26.50 (accept £23 to £29)	A1

Q8 Grade 6 AQA style

Total: 2

Part	Mark scheme	Marks
(a)	reads the value at cumulative frequency 20 ($= 80 \div 4$)	M1
(a)	£18 (accept £15 to £21)	A1

Q9 Grade 7 AQA style

Total: 4

Part	Mark scheme	Marks
(a)	reads the upper quartile at cumulative frequency 60 ($= 80 \times \frac{3}{4}$): £36	M1
(a)	reads the lower quartile at cumulative frequency 20 ($= 80 \div 4$): £18	M1
(a)	$IQR = 36 - 18$	M1
(a)	£18 (accept £14 to £22)	A1

Q10 Grade 7 AQA style

Total: 4

Part	Mark scheme	Marks
(a)	reads the cumulative frequency at $m = 15$: 15	M1
(a)	reads the cumulative frequency at $m = 35$: 58	M1
(a)	$58 - 15$	M1
(a)	43 (accept 37 to 48)	A1

OCR-style questions

Q11 Grade 6 OCR style**Total: 2**

Part	Mark scheme	Marks
(a)	reads the cumulative frequency at $d = 12$ from the curve	M1
(a)	37 (accept 33 to 41)	A1

Q12 Grade 6 OCR style**Total: 2**

Part	Mark scheme	Marks
(a)	reads the value at cumulative frequency 40 ($= 80 \div 2$)	M1
(a)	12.5 km (accept 10 to 15)	A1

Q13 Grade 6 OCR style**Total: 2**

Part	Mark scheme	Marks
(a)	reads the value at cumulative frequency 20 ($= 80 \div 4$)	M1
(a)	8 km (accept 6 to 10)	A1

Q14 Grade 7 OCR style**Total: 4**

Part	Mark scheme	Marks
(a)	reads the upper quartile at cumulative frequency 60 ($= 80 \times \frac{3}{4}$): 18 km	M1
(a)	reads the lower quartile at cumulative frequency 20 ($= 80 \div 4$): 8 km	M1
(a)	$IQR = 18 - 8$	M1
(a)	10 km (accept 7 to 13)	A1

Q15 Grade 7 OCR style**Total: 4**

Part	Mark scheme	Marks
(a)	reads the cumulative frequency at $d = 8$: 20	M1
(a)	reads the cumulative frequency at $d = 18$: 60	M1
(a)	$60 - 20$	M1
(a)	40 (accept 34 to 46)	A1

Teachably-style questions

Q16 Grade 6 Teachably style

Total: 2

Part	Mark scheme	Marks
(a)	reads the cumulative frequency at $l = 10$ from the curve	M1
(a)	44 (accept 40 to 48)	A1

Q17 Grade 6 Teachably style

Total: 2

Part	Mark scheme	Marks
(a)	reads the value at cumulative frequency 40 ($= 80 \div 2$)	M1
(a)	9.5 minutes (accept 7 to 12)	A1

Q18 Grade 6 Teachably style

Total: 2

Part	Mark scheme	Marks
(a)	reads the value at cumulative frequency 20 ($= 80 \div 4$)	M1
(a)	6 minutes (accept 4 to 8)	A1

Q19 Grade 7 Teachably style

Total: 4

Part	Mark scheme	Marks
(a)	reads the upper quartile at cumulative frequency 60 ($= 80 \times \frac{3}{4}$): 13 minutes	M1
(a)	reads the lower quartile at cumulative frequency 20 ($= 80 \div 4$): 6 minutes	M1
(a)	$IQR = 13 - 6$	M1
(a)	7 minutes (accept 4 to 10)	A1

Q20 Grade 7 Teachably style

Total: 4

Part	Mark scheme	Marks
(a)	reads the cumulative frequency at $l = 6$: 21	M1
(a)	reads the cumulative frequency at $l = 14$: 64	M1
(a)	$64 - 21$	M1
(a)	43 (accept 37 to 48)	A1

END OF PAPER

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