
GCSE Mathematics

Box Plots

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: 1

Part	Mark scheme	Marks
(a)	median = 27 minutes	B1

Q2 Grade 6 Edexcel style

Total: 2

Part	Mark scheme	Marks
(a)	range = $46 - 8 = 38$ minutes	B1
(a)	interquartile range = $36 - 18 = 18$ minutes	B1

Q3 Grade 6 Edexcel style

Total: 2

Part	Mark scheme	Marks
(a)	box drawn from 18 to 36 (lower to upper quartile) with the median line at 27	B1
(a)	whiskers drawn to the minimum (8) and maximum (46)	B1

Q4 Grade 7 Edexcel style

Total: 2

Part	Mark scheme	Marks
(a)	the median time decreased from 27 to 19 minutes, so students were generally faster after training	B1
(a)	the interquartile range decreased from 18 to 15 minutes, so the times became more consistent after training	B1

Q5 Grade 7 Edexcel style

Total: 2

Part	Mark scheme	Marks
(a)	25% of the students took longer than the upper quartile	M1
(a)	$40 \div 4 = 10$ students	A1

AQA-style questions

Q6 Grade 6 AQA style

Total: 1

Part	Mark scheme	Marks
(a)	upper quartile = 47	B1

Q7 Grade 6 AQA style

Total: 2

Part	Mark scheme	Marks
(a)	range = $58 - 15 = 43$	B1
(a)	interquartile range = $47 - 28 = 19$	B1

Q8 Grade 6 AQA style

Total: 2

Part	Mark scheme	Marks
(a)	box drawn from 28 to 47 (lower to upper quartile) with the median line at 38	B1
(a)	whiskers drawn to the minimum (15) and maximum (58)	B1

Q9 Grade 7 AQA style

Total: 2

Part	Mark scheme	Marks
(a)	Class A's median mark (38) is higher than Class B's median mark (36), so Class A generally scored higher	B1
(a)	Class A's interquartile range (19) is greater than Class B's (14), so Class A's marks were more spread out	B1

Q10 Grade 7 AQA style

Total: 2

Part	Mark scheme	Marks
(a)	25% of the students scored more than the upper quartile	M1
(a)	$32 \div 4 = 8$ students	A1

OCR-style questions

Q11 Grade 6 OCR style

Total: 1

Part	Mark scheme	Marks
(a)	minimum = 3 km	B1

Q12 Grade 6 OCR style

Total: 2

Part	Mark scheme	Marks
(a)	range = $25 - 3 = 22$ km	B1
(a)	interquartile range = $19 - 9 = 10$ km	B1

Q13 Grade 6 OCR style

Total: 2

Part	Mark scheme	Marks
(a)	box drawn from 9 to 19 (lower to upper quartile) with the median line at 14	B1
(a)	whiskers drawn to the minimum (3) and maximum (25)	B1

Q14 Grade 7 OCR style

Total: 2

Part	Mark scheme	Marks
(a)	Group B's median distance (17 km) is higher than Group A's (14 km), so Group B generally ran further	B1
(a)	Group B's interquartile range (11 km) is greater than Group A's (10 km), so Group B's distances were slightly more spread out	B1

Q15 Grade 7 OCR style

Total: 2

Part	Mark scheme	Marks
(a)	25% of the athletes ran further than the upper quartile	M1
(a)	$48 \div 4 = 12$ athletes	A1

Teachably-style questions

Q16 Grade 6 Teachably style

Total: 1

Part	Mark scheme	Marks
(a)	lower quartile = 24 years	B1

Q17 Grade 6 Teachably style

Total: 2

Part	Mark scheme	Marks
(a)	range = $48 - 16 = 32$ years	B1
(a)	interquartile range = $40 - 24 = 16$ years	B1

Q18 Grade 6 Teachably style

Total: 2

Part	Mark scheme	Marks
(a)	box drawn from 24 to 40 (lower to upper quartile) with the median line at 32	B1
(a)	whiskers drawn to the minimum (16) and maximum (48)	B1

Q19 Grade 7 Teachably style

Total: 2

Part	Mark scheme	Marks
(a)	the evening members' median age (34) is higher than the morning members' (32), so evening members are generally slightly older	B1
(a)	the evening members' interquartile range (17) is greater than the morning members' (16), so the evening members' ages are slightly more spread out	B1

Q20 Grade 7 Teachably style

Total: 2

Part	Mark scheme	Marks
(a)	25% of the members are older than the upper quartile	M1
(a)	$44 \div 4 = 11$ members	A1

END OF PAPER

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