
GCSE Mathematics

Range and Spread

Mark Scheme - Foundation Tier | Grades 2-4

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

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Edexcel-style questions

Q1 Grade 2 Edexcel style

Total: 2

Part	Mark scheme	Marks
(a)	largest = 12, smallest = 2	M1
(a)	range = $12 - 2 = 10$	A1

Q2 Grade 3 Edexcel style

Total: 2

Part	Mark scheme	Marks
(a)	largest value with a frequency = 4, smallest value with a frequency = 0	M1
(a)	range = $4 - 0 = 4$	A1

Q3 Grade 3 Edexcel style

Total: 3

Part	Mark scheme	Marks
(a)	smallest known height = 15 cm	M1
(a)	tallest = $15 + 24$	M1
(a)	39 cm	A1

Q4 Grade 4 Edexcel style

Total: 3

Part	Mark scheme	Marks
(a)	range A = $102 - 98 = 4$	M1
(a)	range B = $110 - 90 = 20$	M1
(a)	Machine A is more consistent (smaller range)	A1

Q5 Grade 4 Edexcel style

Total: 4

Part	Mark scheme	Marks
(a)	mean A = $(5.2 + 5.5 + 5.1 + 5.4 + 5.3) \div 5 = 5.3$ m, range A = $5.5 - 5.1 = 0.4$ m	M1
(a)	mean B = $(4.8 + 5.9 + 4.5 + 6.0 + 5.3) \div 5 = 5.3$ m, range B = $6.0 - 4.5 = 1.5$ m	M1
(a)	the means are equal but range A is smaller than range B	M1
(a)	Athlete A is more consistent	A1

AQA-style questions

Q6 Grade 2 AQA style

Total: 2

Part	Mark scheme	Marks
(a)	largest = 22, smallest = 8	M1
(a)	range = $22 - 8 = 14$	A1

Q7 Grade 3 AQA style

Total: 2

Part	Mark scheme	Marks
(a)	largest value with a frequency = 3, smallest value with a frequency = 0	M1
(a)	range = $3 - 0 = 3$	A1

Q8 Grade 3 AQA style

Total: 3

Part	Mark scheme	Marks
(a)	largest known weight = 25 kg	M1
(a)	lightest = $25 - 18$	M1
(a)	7 kg	A1

Q9 Grade 4 AQA style

Total: 3

Part	Mark scheme	Marks
(a)	range A = $45 - 41 = 4$	M1
(a)	range B = $50 - 38 = 12$	M1
(a)	Runner A is more consistent (smaller range)	A1

Q10 Grade 4 AQA style

Total: 4

Part	Mark scheme	Marks
(a)	mean A = $(14 + 16 + 15 + 17 + 13) \div 5 = 15$, range A = $17 - 13 = 4$	M1
(a)	mean B = $(10 + 20 + 12 + 22 + 11) \div 5 = 15$, range B = $22 - 10 = 12$	M1
(a)	the means are equal but range A is smaller than range B	M1
(a)	Student A is more consistent	A1

OCR-style questions

Q11 Grade 2 OCR style

Total: 2

Part	Mark scheme	Marks
(a)	largest = 17, smallest = 2	M1
(a)	range = $17 - 2 = 15$	A1

Q12 Grade 3 OCR style

Total: 2

Part	Mark scheme	Marks
(a)	largest value with a frequency = 5, smallest value with a frequency = 1	M1
(a)	range = $5 - 1 = 4$	A1

Q13 Grade 3 OCR style

Total: 3

Part	Mark scheme	Marks
(a)	smallest known time = 11.8 s	M1
(a)	slowest = $11.8 + 3.5$	M1
(a)	15.3 s	A1

Q14 Grade 4 OCR style

Total: 3

Part	Mark scheme	Marks
(a)	range A = $72 - 65 = 7$	M1
(a)	range B = $90 - 50 = 40$	M1
(a)	Class A is more consistent (smaller range)	A1

Q15 Grade 4 OCR style

Total: 4

Part	Mark scheme	Marks
(a)	mean A = $(45 + 50 + 48 + 52 + 45) \div 5 = 48$, range A = $52 - 45 = 7$	M1
(a)	mean B = $(30 + 65 + 40 + 70 + 35) \div 5 = 48$, range B = $70 - 30 = 40$	M1
(a)	the means are equal but range A is smaller than range B	M1
(a)	Machine A is more consistent	A1

Teachably-style questions

Q16 Grade 2 Teachably style

Total: 2

Part	Mark scheme	Marks
(a)	largest = 32, smallest = 10	M1
(a)	range = $32 - 10 = 22$	A1

Q17 Grade 3 Teachably style

Total: 2

Part	Mark scheme	Marks
(a)	largest value with a frequency = 15, smallest value with a frequency = 12	M1
(a)	range = $15 - 12 = 3$	A1

Q18 Grade 3 Teachably style

Total: 3

Part	Mark scheme	Marks
(a)	largest known score = 68	M1
(a)	lowest = $68 - 25$	M1
(a)	43	A1

Q19 Grade 4 Teachably style

Total: 3

Part	Mark scheme	Marks
(a)	range A = $340 - 310 = 30$	M1
(a)	range B = $450 - 200 = 250$	M1
(a)	Shop A is more consistent (smaller range)	A1

Q20 Grade 4 Teachably style

Total: 4

Part	Mark scheme	Marks
(a)	mean A = $(80 + 85 + 82 + 88 + 85) \div 5 = 84$, range A = $88 - 80 = 8$	M1
(a)	mean B = $(60 + 100 + 70 + 110 + 80) \div 5 = 84$, range B = $110 - 60 = 50$	M1
(a)	the means are equal but range A is smaller than range B	M1
(a)	Bakery A is more consistent	A1

END OF PAPER

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