
GCSE Mathematics

Quadratic Inequalities

Mark Scheme - Higher | Grades 8-9

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

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Edexcel-style questions

Q1 Grade 8 Edexcel style

Total: 3

Part	Mark scheme	Marks
(a)	$(x + 2)(x - 3) = 0$	M1
(a)	critical values: $x = -2, x = 3$	M1
(a)	$x < -2$ or $x > 3$	A1

Q2 Grade 8 Edexcel style

Total: 3

Part	Mark scheme	Marks
(a)	$(x + 2)(x - 3) = 0$	M1
(a)	critical values: $x = -2, x = 3$	M1
(a)	$-2 < x < 3$	A1

Q3 Grade 8 Edexcel style

Total: 4

Part	Mark scheme	Marks
(a)	critical values: $x = -2, x = 3$	M1
(a)	$x \leq -2$ or $x \geq 3$	A1
(a)	closed circles drawn at $x = -2$ and $x = 3$	B1
(a)	regions shaded/arrowed outward from both circles	B1

Q4 Grade 9 Edexcel style

Total: 4

Part	Mark scheme	Marks
(a)	$x^2 - x - 6 < 0 \Rightarrow (x + 2)(x - 3) < 0$, critical values $x = -2, x = 3$	M1
(a)	$-2 < x < 3$	M1
(a)	combine with $x > 0$	M1
(a)	$0 < x < 3$	A1

Q5 Grade 9 Edexcel style

Total: 2

Part	Mark scheme	Marks
(a)	reads the roots from the graph: $x = -1$ and $x = 3$	M1
(a)	$-1 < x < 3$	A1

AQA-style questions

Q6 Grade 8 AQA style

Total: 3

Part	Mark scheme	Marks
(a)	$(x + 2)(x - 4) = 0$	M1
(a)	critical values: $x = -2, x = 4$	M1
(a)	$x < -2$ or $x > 4$	A1

Q7 Grade 8 AQA style

Total: 3

Part	Mark scheme	Marks
(a)	$(x + 2)(x - 4) = 0$	M1
(a)	critical values: $x = -2, x = 4$	M1
(a)	$-2 < x < 4$	A1

Q8 Grade 8 AQA style

Total: 4

Part	Mark scheme	Marks
(a)	critical values: $x = -2, x = 4$	M1
(a)	$-2 \leq x \leq 4$	A1
(a)	closed circles drawn at $x = -2$ and $x = 4$	B1
(a)	region shaded between the two circles	B1

Q9 Grade 9 AQA style

Total: 4

Part	Mark scheme	Marks
(a)	$x^2 - 2x - 8 < 0 \Rightarrow (x + 2)(x - 4) < 0$, critical values $x = -2, x = 4$	M1
(a)	$-2 < x < 4$	M1
(a)	combine with $x < 1$	M1
(a)	$-2 < x < 1$	A1

Q10 Grade 9 AQA style

Total: 2

Part	Mark scheme	Marks
(a)	reads the roots from the graph: $x = -1$ and $x = 5$	M1
(a)	$x < -1$ or $x > 5$	A1

OCR-style questions

Q11 Grade 8 OCR style**Total: 3**

Part	Mark scheme	Marks
(a)	$(x - 2)(x - 3) = 0$	M1
(a)	critical values: $x = 2, x = 3$	M1
(a)	$x < 2$ or $x > 3$	A1

Q12 Grade 8 OCR style**Total: 3**

Part	Mark scheme	Marks
(a)	$(x - 2)(x - 3) = 0$	M1
(a)	critical values: $x = 2, x = 3$	M1
(a)	$2 < x < 3$	A1

Q13 Grade 8 OCR style**Total: 4**

Part	Mark scheme	Marks
(a)	critical values: $x = 2, x = 3$	M1
(a)	$x \leq 2$ or $x \geq 3$	A1
(a)	closed circles drawn at $x = 2$ and $x = 3$	B1
(a)	regions shaded/arrowed outward from both circles	B1

Q14 Grade 9 OCR style**Total: 4**

Part	Mark scheme	Marks
(a)	$x^2 - 7x + 10 < 0 \Rightarrow (x - 2)(x - 5) < 0$, critical values $x = 2, x = 5$	M1
(a)	$2 < x < 5$	M1
(a)	combine with $x > 3$	M1
(a)	$3 < x < 5$	A1

Q15 Grade 9 OCR style**Total: 2**

Part	Mark scheme	Marks
(a)	reads the roots from the graph: $x = -1$ and $x = 2$	M1
(a)	$-1 < x < 2$	A1

Teachably-style questions

Q16 Grade 8 Teachably style

Total: 3

Part	Mark scheme	Marks
(a)	$(x + 5)(x - 2) = 0$	M1
(a)	critical values: $x = -5, x = 2$	M1
(a)	$x < -5$ or $x > 2$	A1

Q17 Grade 8 Teachably style

Total: 3

Part	Mark scheme	Marks
(a)	$(x + 5)(x - 2) = 0$	M1
(a)	critical values: $x = -5, x = 2$	M1
(a)	$-5 < x < 2$	A1

Q18 Grade 8 Teachably style

Total: 4

Part	Mark scheme	Marks
(a)	critical values: $x = -5, x = 2$	M1
(a)	$-5 \leq x \leq 2$	A1
(a)	closed circles drawn at $x = -5$ and $x = 2$	B1
(a)	region shaded between the two circles	B1

Q19 Grade 9 Teachably style

Total: 4

Part	Mark scheme	Marks
(a)	$x^2 + 3x - 10 < 0 \Rightarrow (x + 5)(x - 2) < 0$, critical values $x = -5, x = 2$	M1
(a)	$-5 < x < 2$	M1
(a)	combine with $x > -3$	M1
(a)	$-3 < x < 2$	A1

Q20 Grade 9 Teachably style

Total: 2

Part	Mark scheme	Marks
(a)	reads the roots from the graph: $x = -1$ and $x = 4$	M1
(a)	$x < -1$ or $x > 4$	A1

END OF PAPER

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