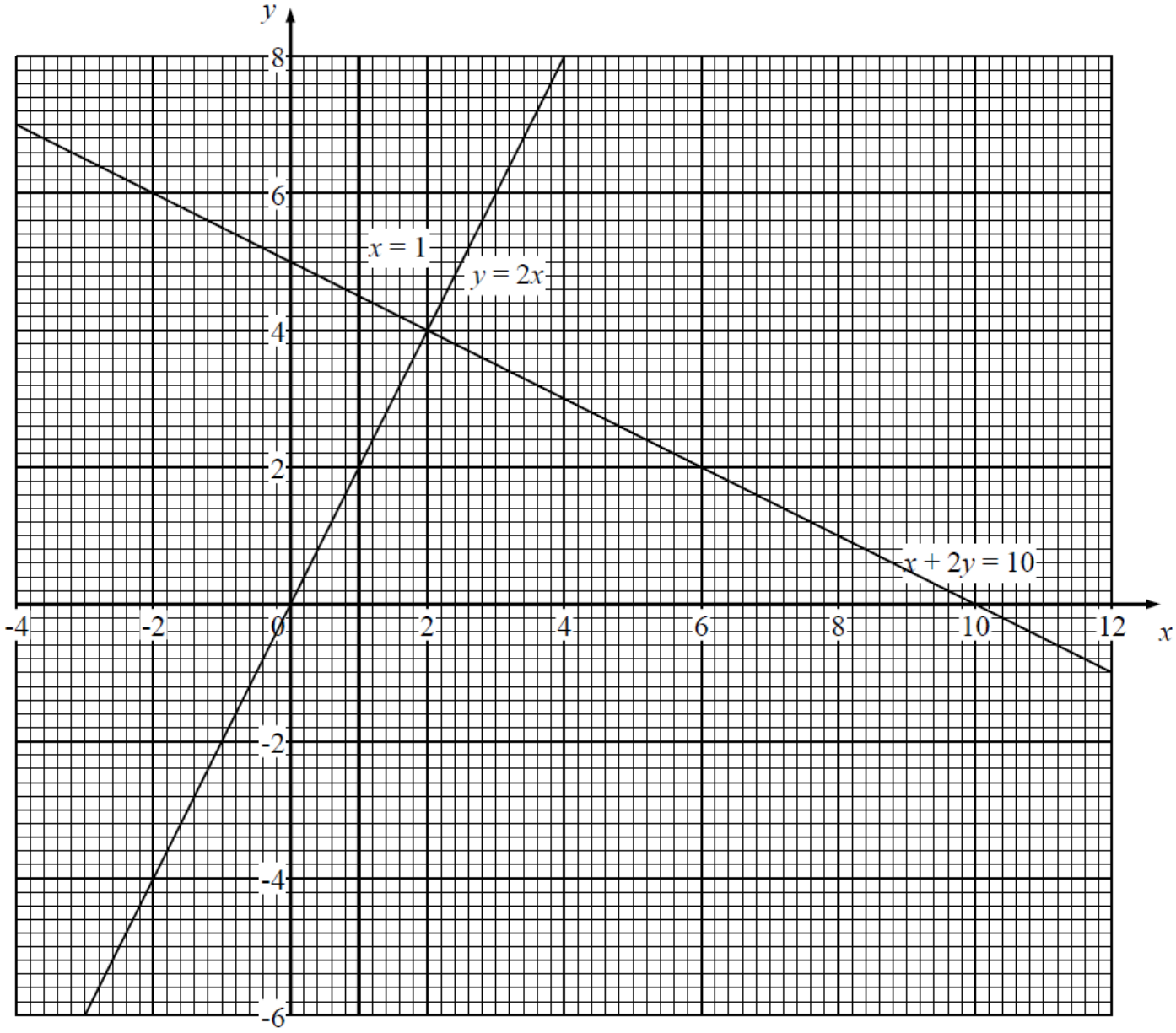
Level 3 Algebra – Inequalities - Graphs - Answers

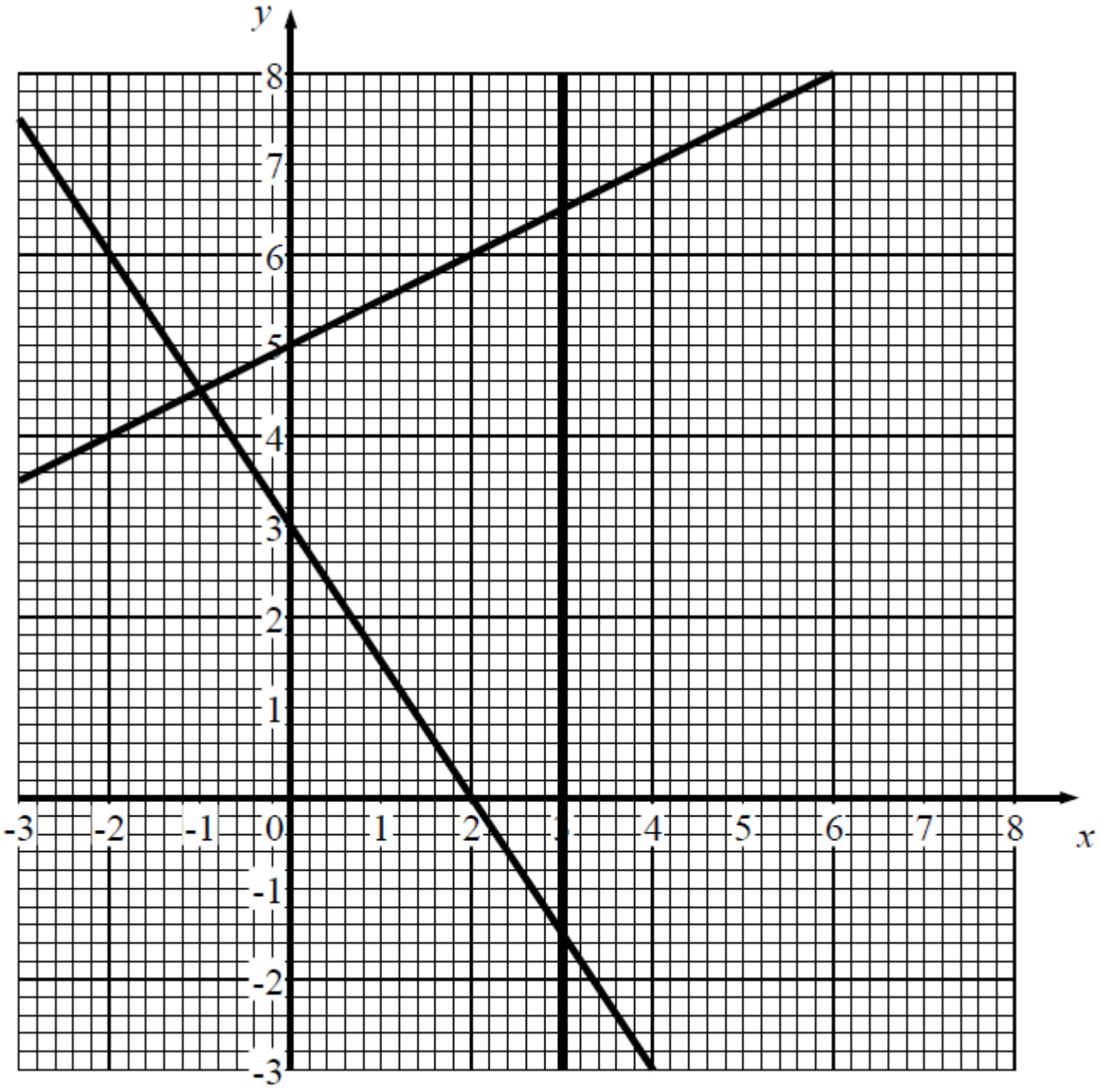
June 2013 - Question 3

3			Correct region shaded	5	M3 for drawing all 3 lines correctly (M2 for drawing 2 lines correctly) (M1 for drawing one line correctly) A2 for correct shading of triangle with vertices ((1, 2); (1 , $4\frac{1}{2}$); (2, 4) (A1 for correct shading for two inequalities)



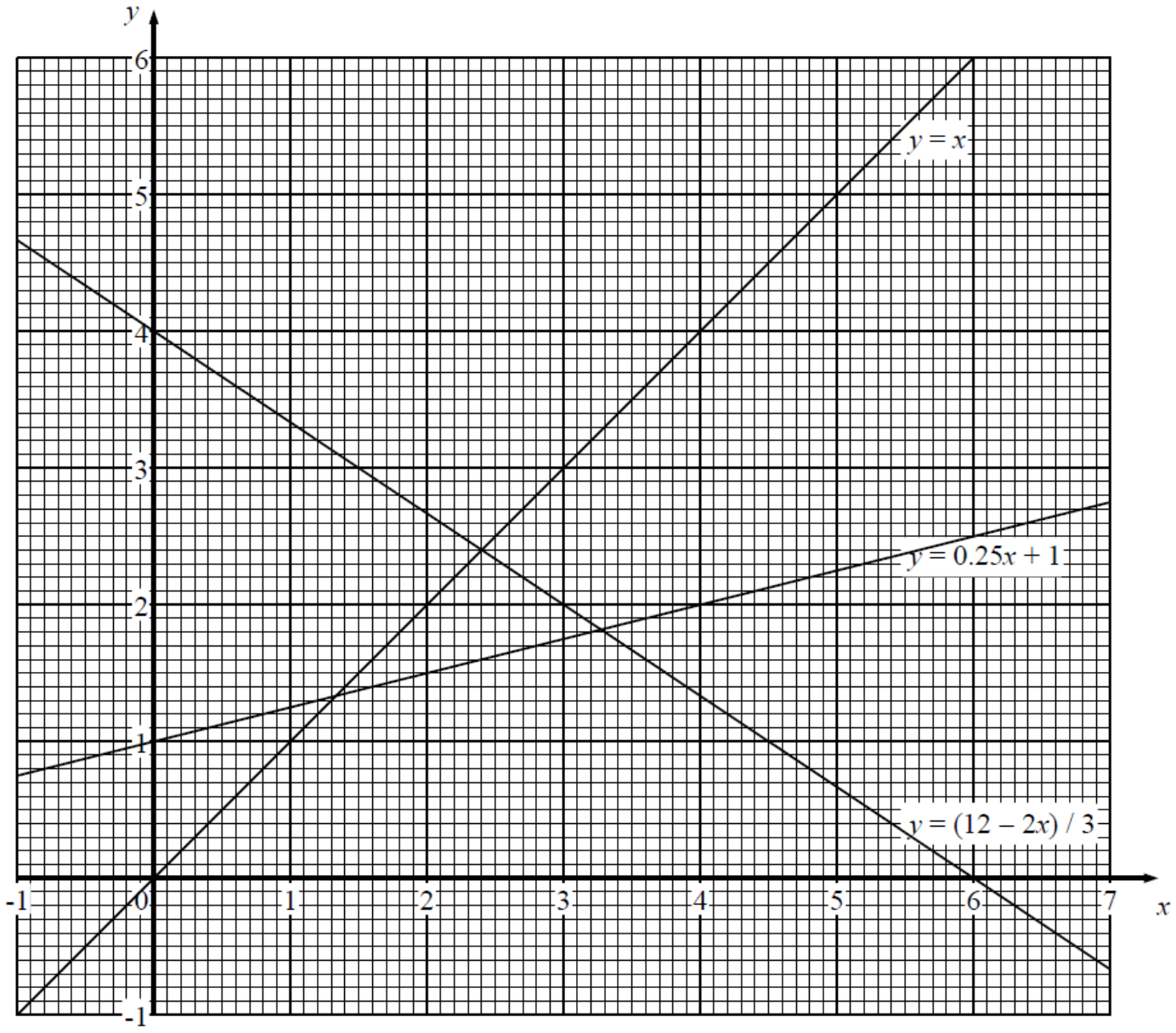
Jan 2014 - Question 8

8			shaded region	5	M1 for drawing line $x = 3$ M1 for drawing line $3x + 2y = 6$ M1 for drawing line $y = \frac{1}{2}x + 5$ A2 for fully correct region shaded (A1 for correct shading for one inequality)



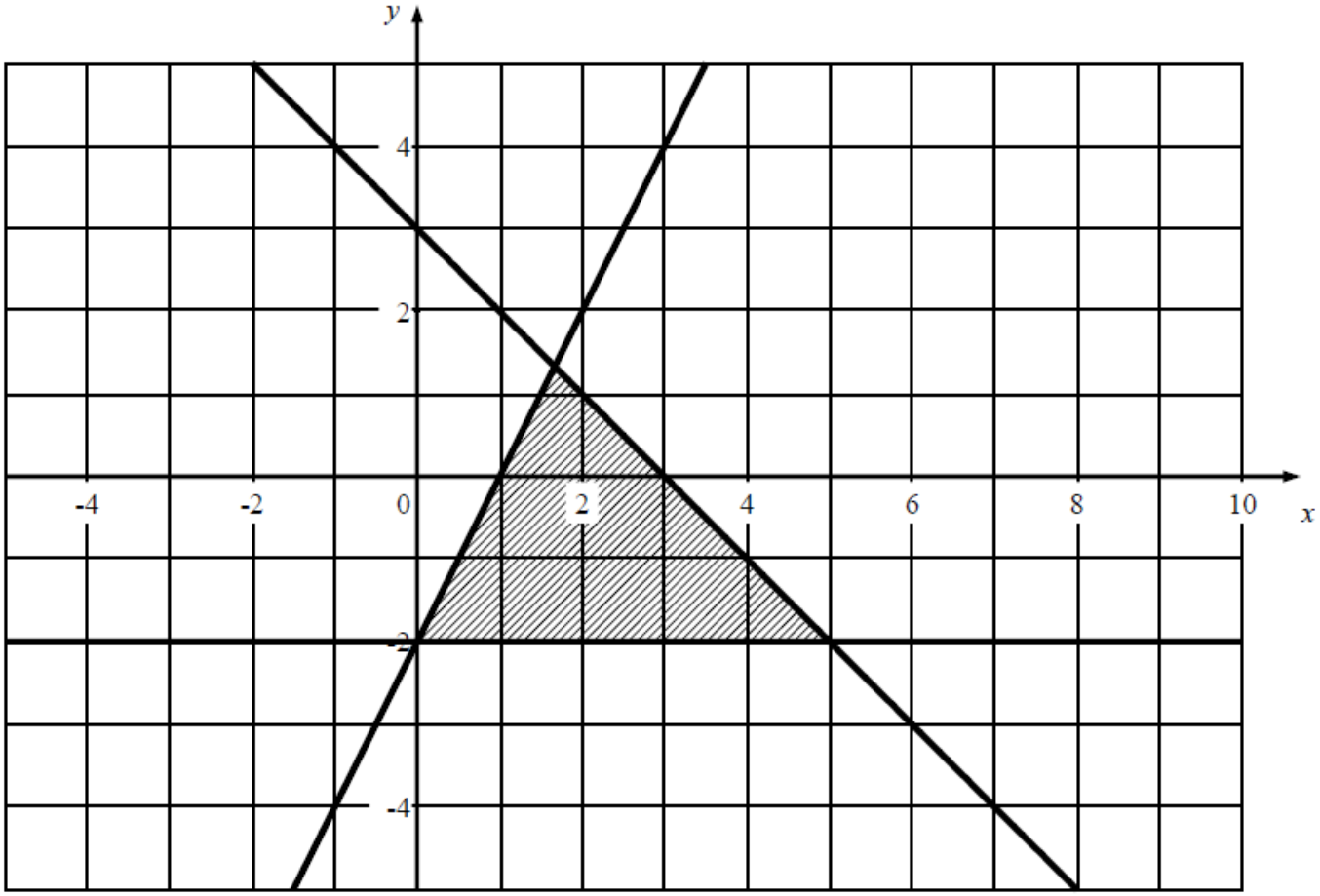
Jan 2015 - Question 7

Question		Working	Answer	Mark	Notes
7	(a)		Correct region shaded	5	M3 for drawing all 3 lines correctly (M2 for drawing 2 lines correctly) (M1 for drawing one line correctly) A2 for correct shading of correct triangle (A1 for correct shading for one inequality)
	(b)		(2, 2) (3, 2)	1	B1 ft from (a) provided a triangle is seen



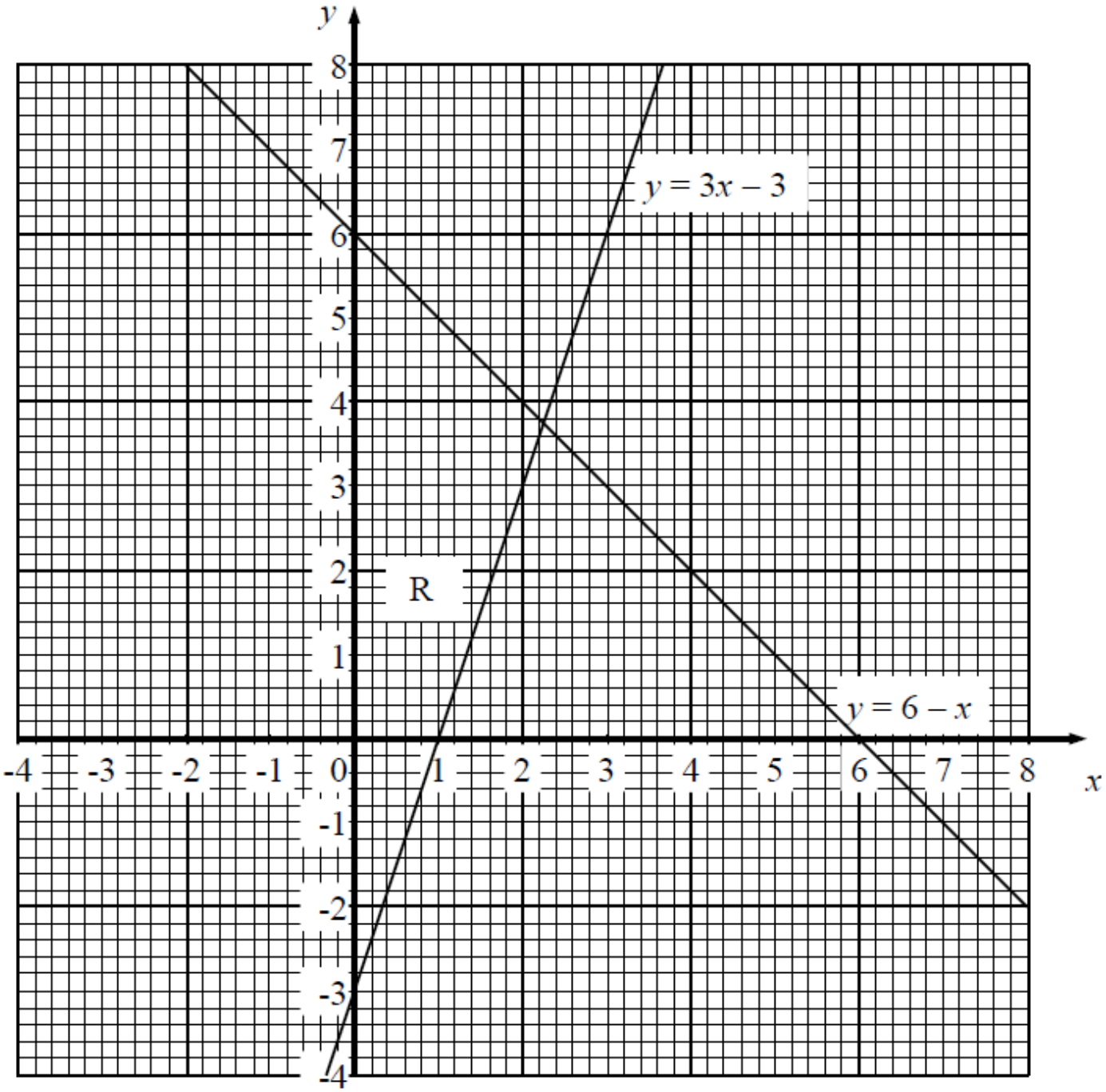
June 2015 - Question 7

Question	Working	Answer	Mark	Notes
7		Shaded region	5	M3 for drawing all 3 lines correctly (M2 for drawing 2 lines correctly) (M1 for drawing 1 line correctly) A2 for fully correct shading of region (A1 for correct shading for 1 inequality)



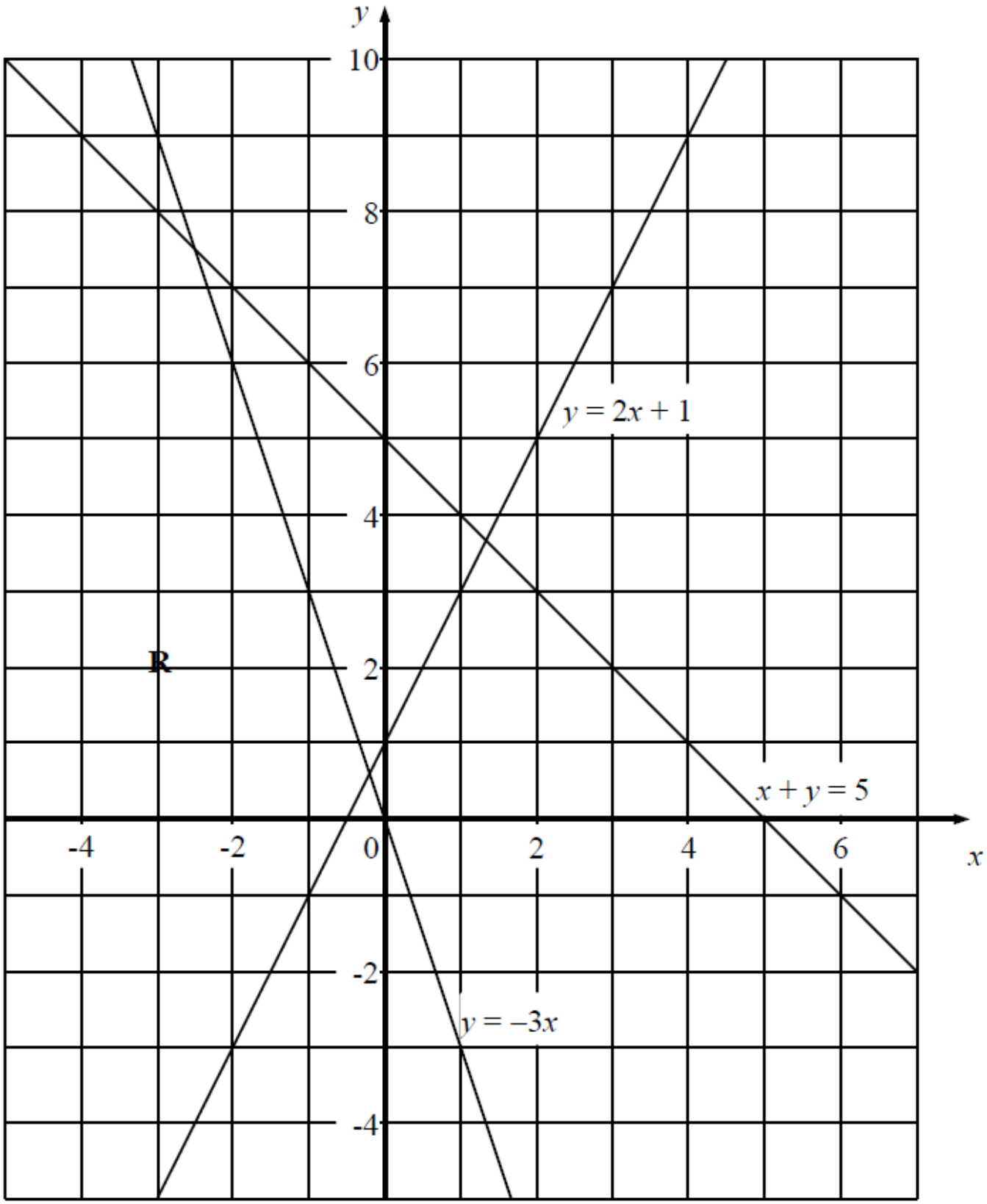
Jan 2016 - Question 4

Question	Working	Answer	Mark	Notes
4		graph	4	M2 for drawing $x + y = 6$ and $y = 3x - 3$ correctly (M1 for drawing 1 line correctly) A2 for correctly shading required region (A1 for correct shading for 2 inequalities)



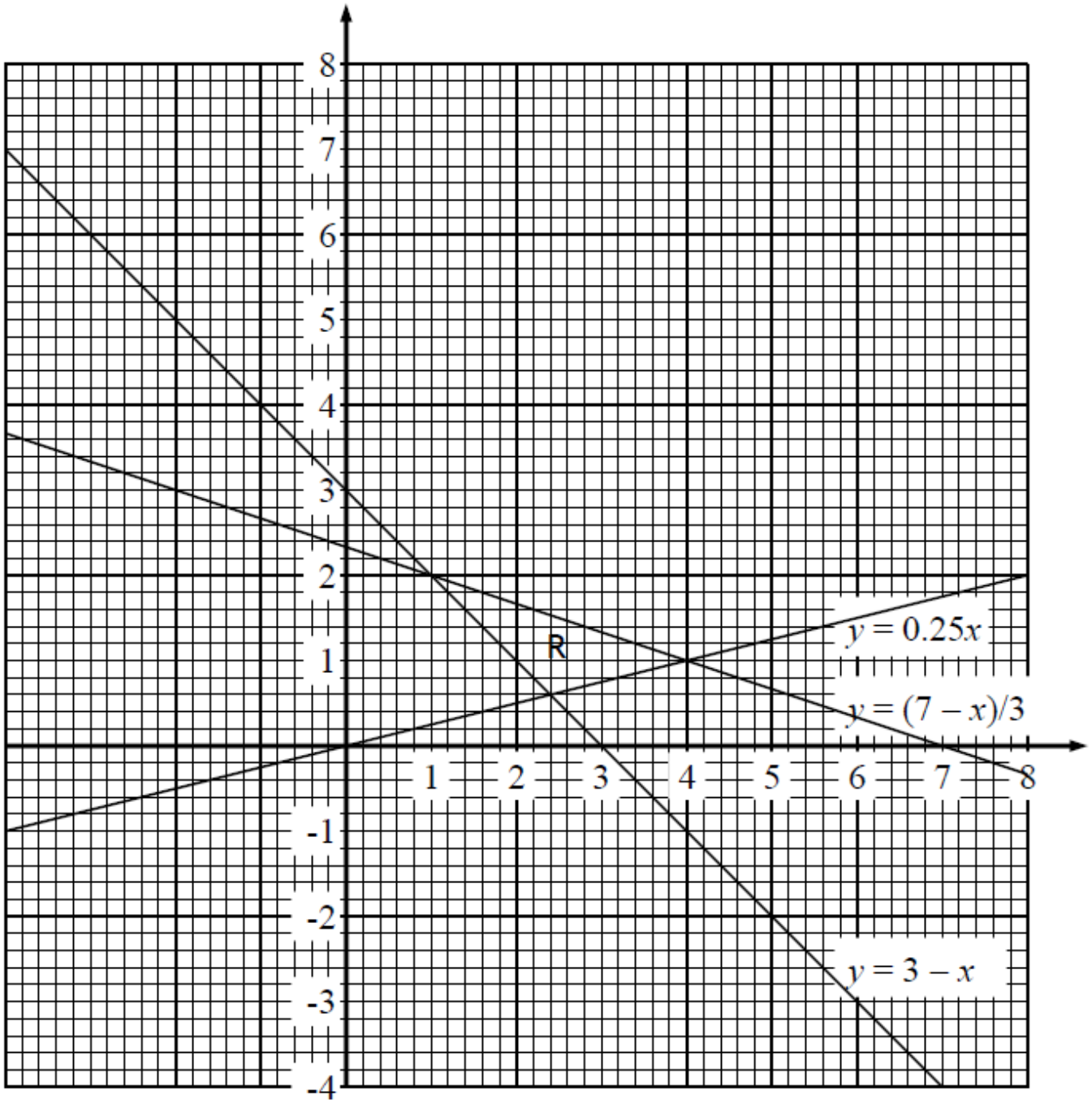
June 2016 - Question 3

3		Shaded region	5	M3 for drawing all 3 lines correctly (M2 for drawing 2 lines correctly) (M1 for drawing 1 line correctly) A2 for fully correct shading of region (A1 for correct shading for 2 inequalities)



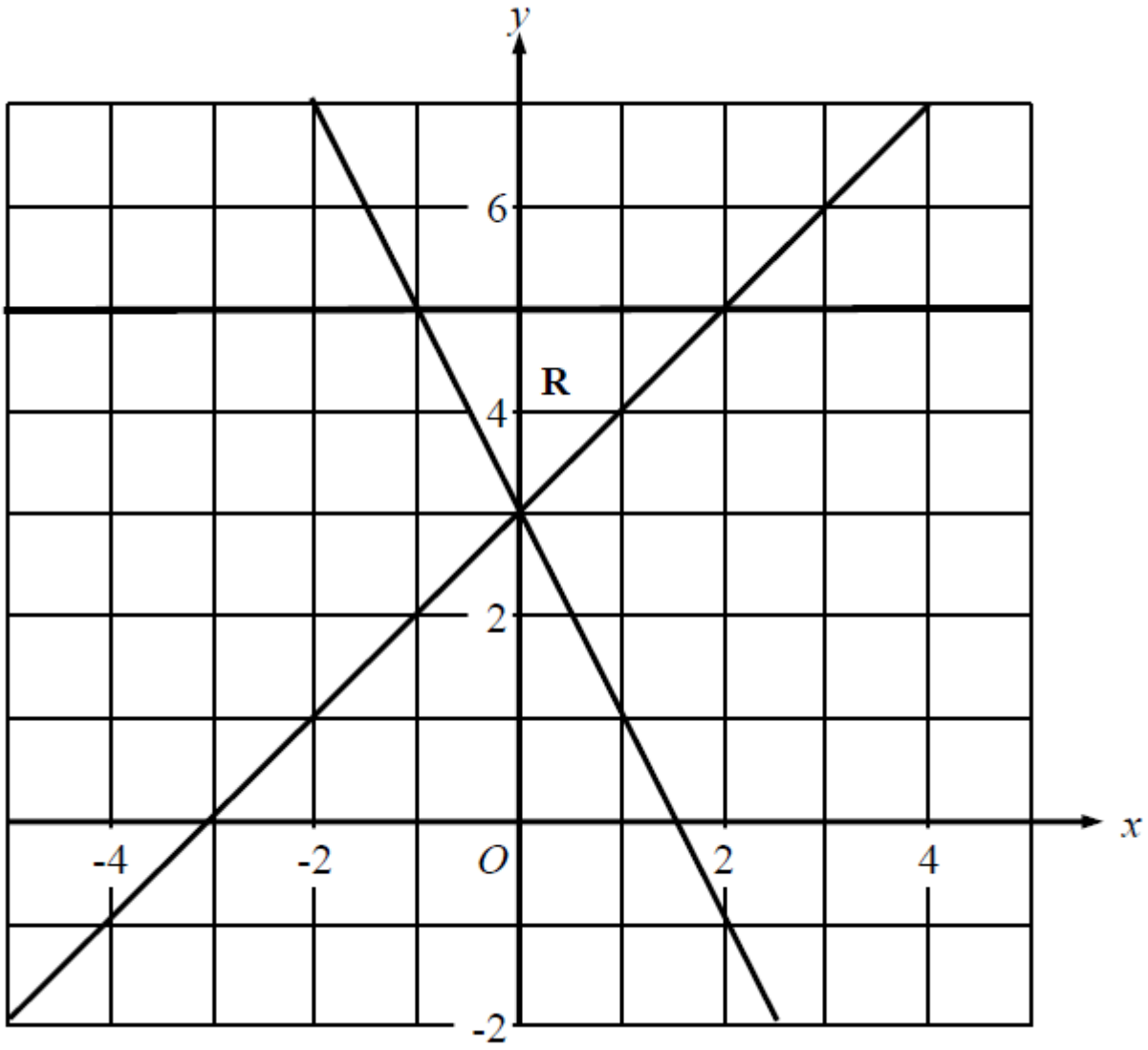
Jan 2017 - Question 2

2		graph	5	M1 for drawing $y = \frac{1}{4}x$ correctly M1 for drawing $y = 3 - x$ correctly M1 for drawing $x + 3y = 7$ correctly A2 for correctly shading required region (A1 for correct shading for 2 inequalities)



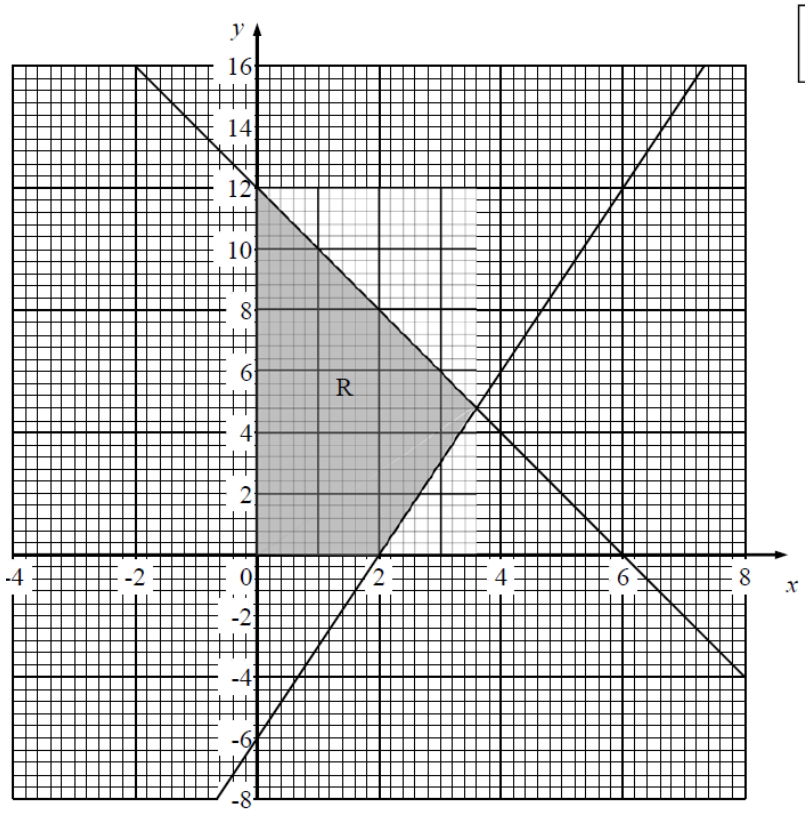
June 2017 - Question 7

7		Shaded region	5	M3 for drawing all 3 lines correctly (M2 for drawing 2 lines correctly) (M1 for drawing 1 line correctly) A2 for fully correct shading of region (A1 for correct shading for 2 inequalities)



Jan 2018 - Question 2

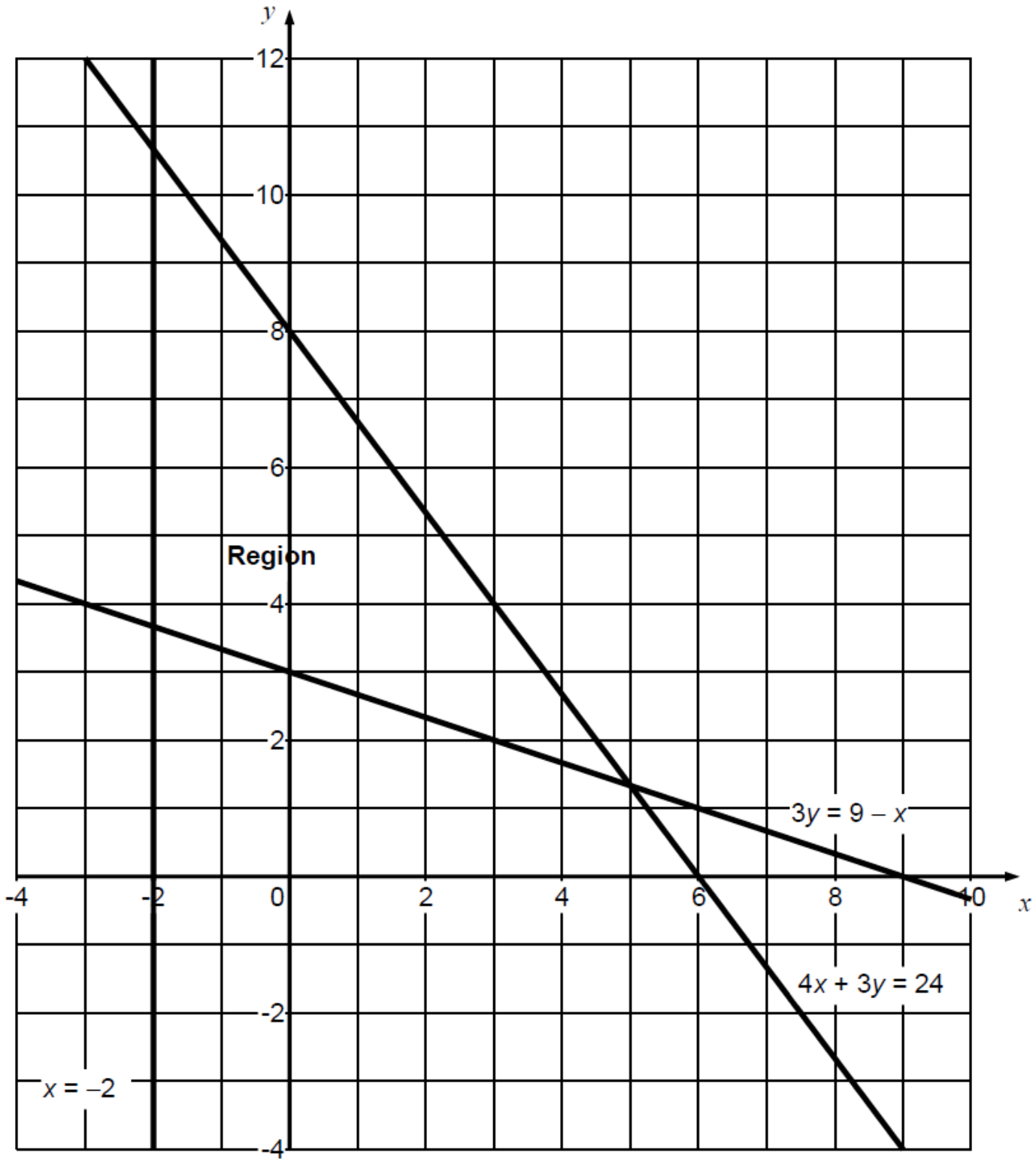
2		Correct region indicated	4	M1 for drawing $y = 3x - 6$ M1 for drawing $2x + y = 12$ A2 for correctly indicating required region (A1 for correctly indicating region satisfying 3 of the inequalities)



Please ensure the whole of the area bounded by the 4 lines $x = 0$, $y = 0$, $y = 3x - 6$ and $2x + y = 12$ is shaded

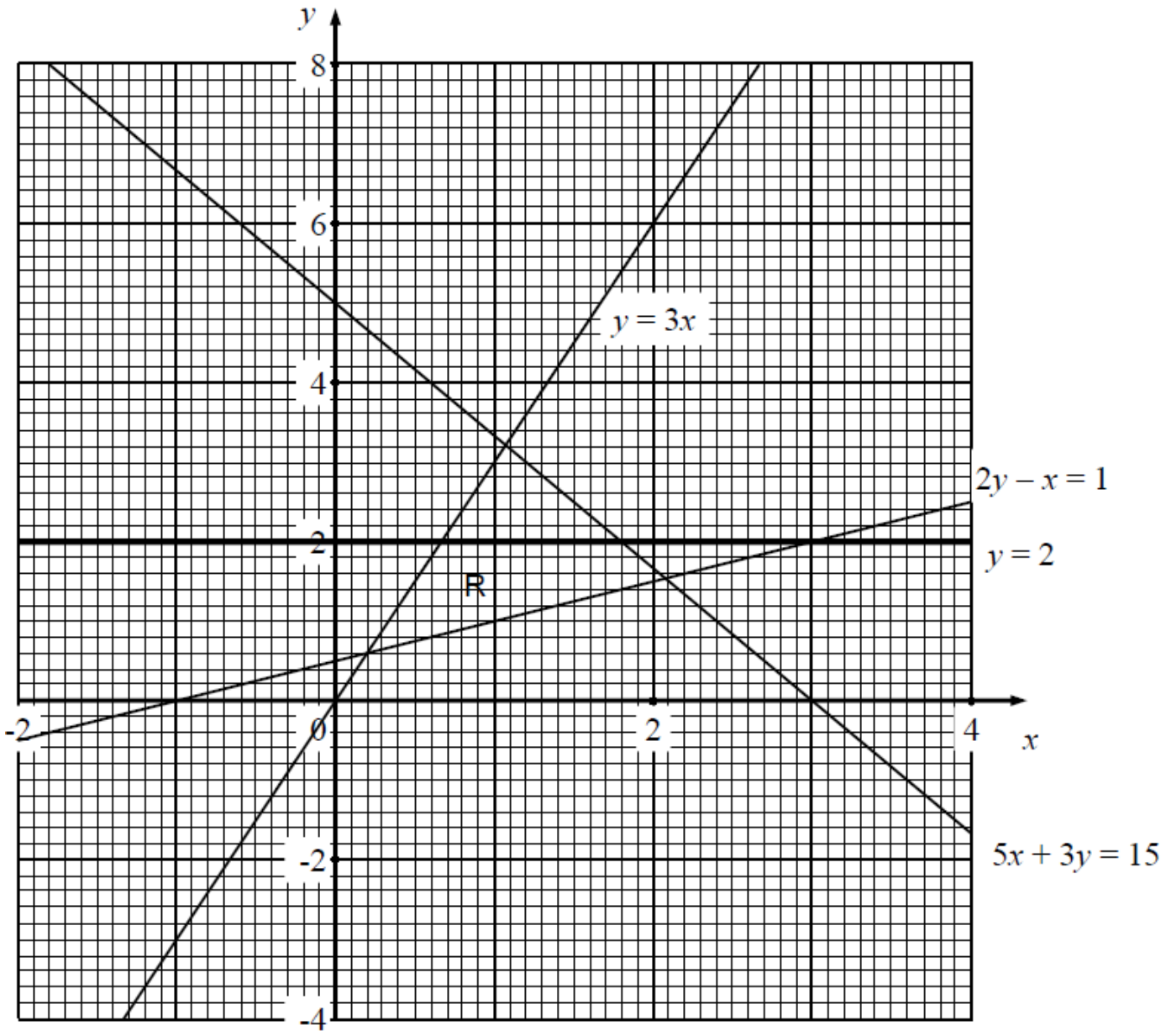
June 2018 - Question 7

7		Correct region shown	5	M3 for drawing $4x + 3y = 24$, $x = -2$ and $3y = 9 - x$ correctly (M2 for drawing 2 lines correctly M1 for drawing 1 line correctly) A2 for correctly shading required region (A1 for correct shading for 2 inequalities)



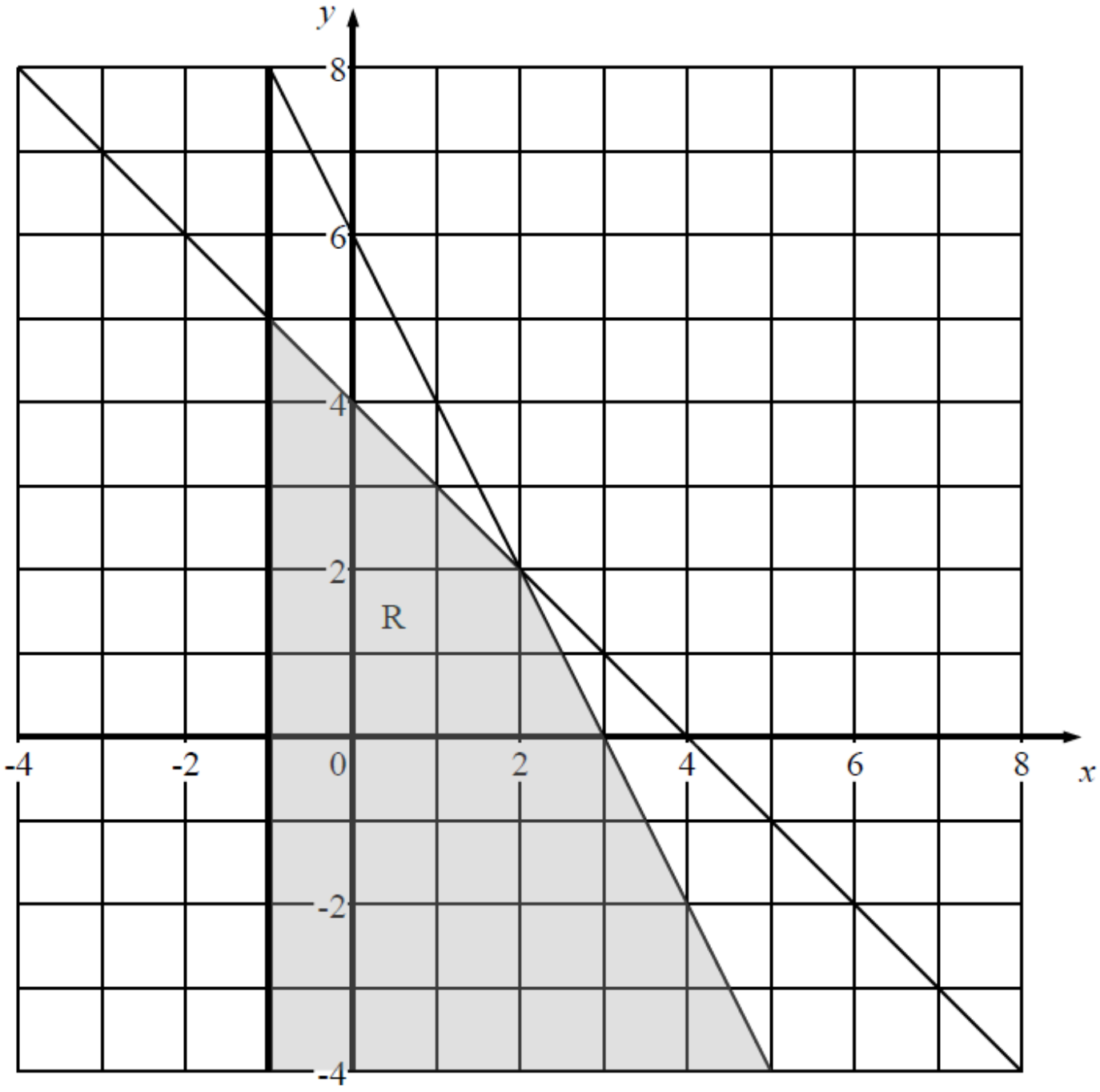
Jan 2019 - Question 2

2		Correct region indicated	5	M1 for drawing $y = 2$ and $y = 3x$ correctly M1 for drawing $5x + 3y = 15$ correctly M1 for drawing $2y - x = 1$ correctly A2 for correctly shading required region (A1 for correct shading for 3 inequalities)



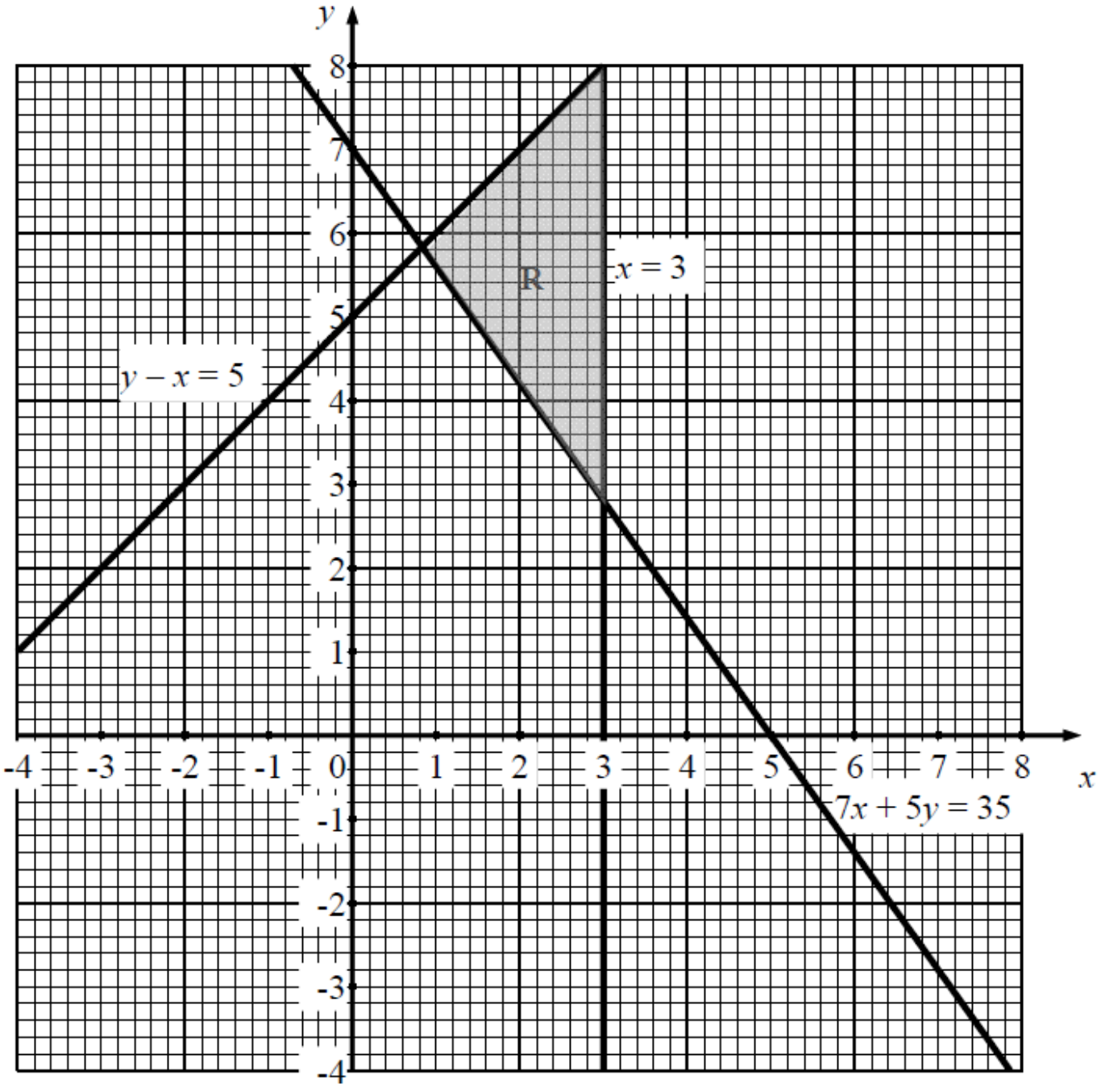
June 2019 - Question 8

8		Region drawn	5	M1 for drawing $x = -1$ correctly M1 for drawing $2x + y = 6$ correctly M1 for drawing $y = 4 - x$ correctly A2 for correctly shading required region (A1 for correct shading for 2 inequalities)



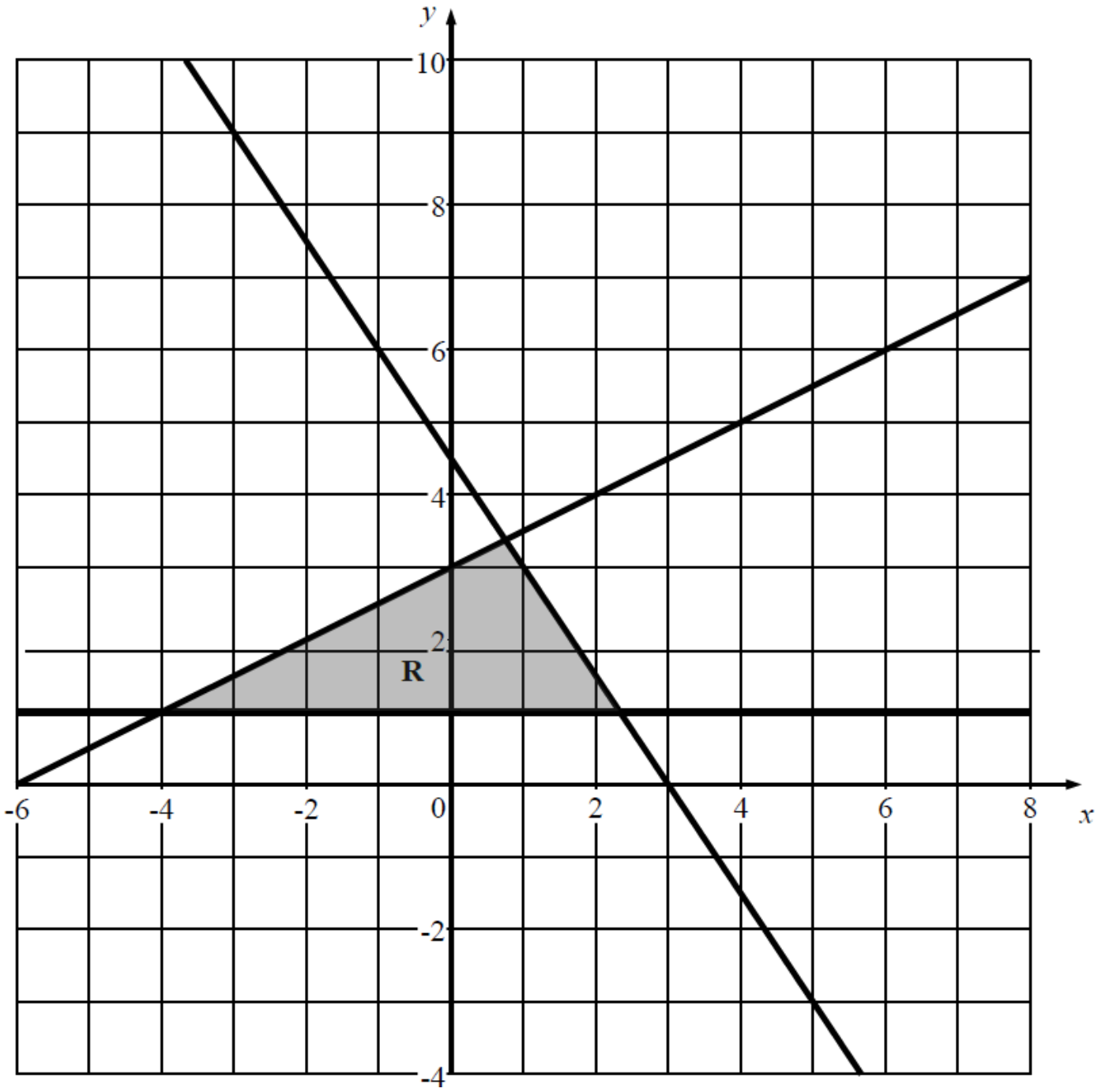
Jan 2020 - Question 2

2	(a)		Correct region indicated	5	M1 for drawing $x = 3$ correctly M1 for drawing $y - x = 5$ correctly M1 for drawing $7x + 5y = 35$ correctly A2 for correctly shading required region (A1 for correct shading for 2 inequalities)
	(b)		(2, 5) (2, 6)	1	B1 for both correct and no extras



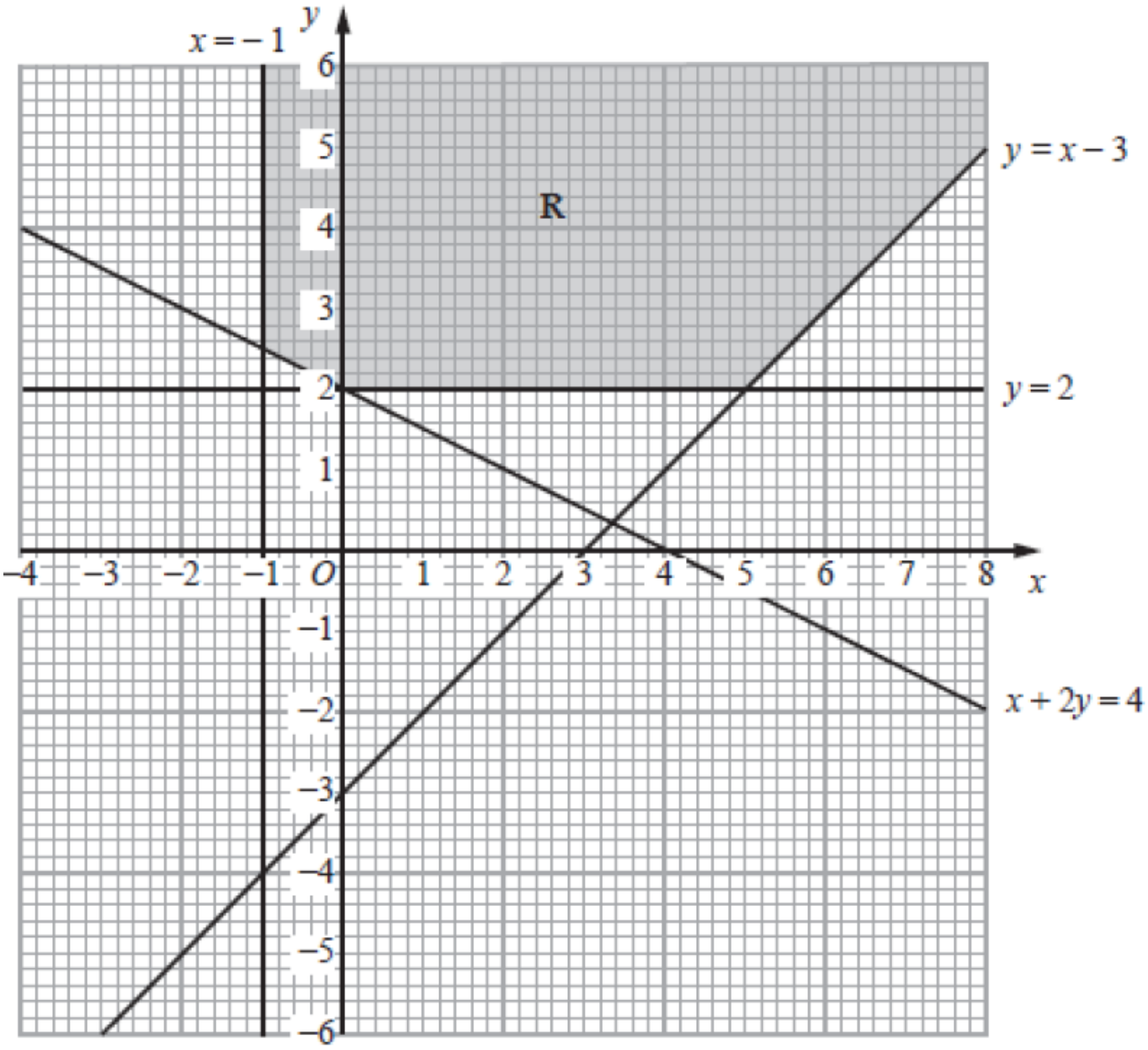
Jan 2021 - Question 2

2		Region drawn	5	M1 for drawing $y = 1$ correctly M1 for drawing $3x + 2y = 9$ correctly M1 for drawing $y = \frac{1}{2}x + 3$ correctly A2 for correctly shading required region (A1 for correct shading for 2 inequalities)



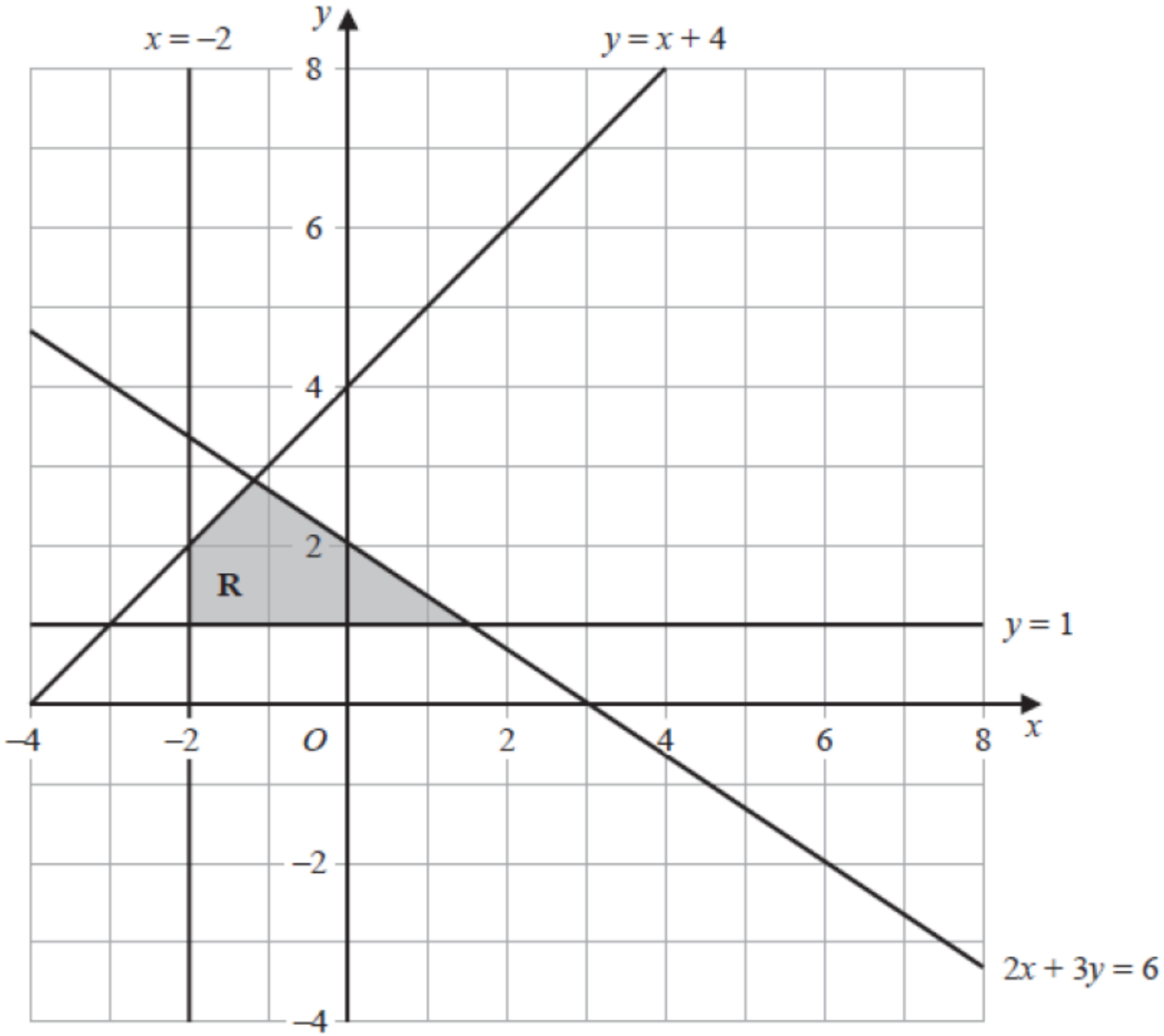
Jan 2022 - Question 4

4		Correct region indicated	5	M1 for drawing $x = -1$ and $y = 2$ correctly M1 for drawing $y = x - 3$ correctly M1 for drawing $x + 2y = 4$ correctly A2 for correctly shading required region (A1 for correct shading for 3 inequalities)



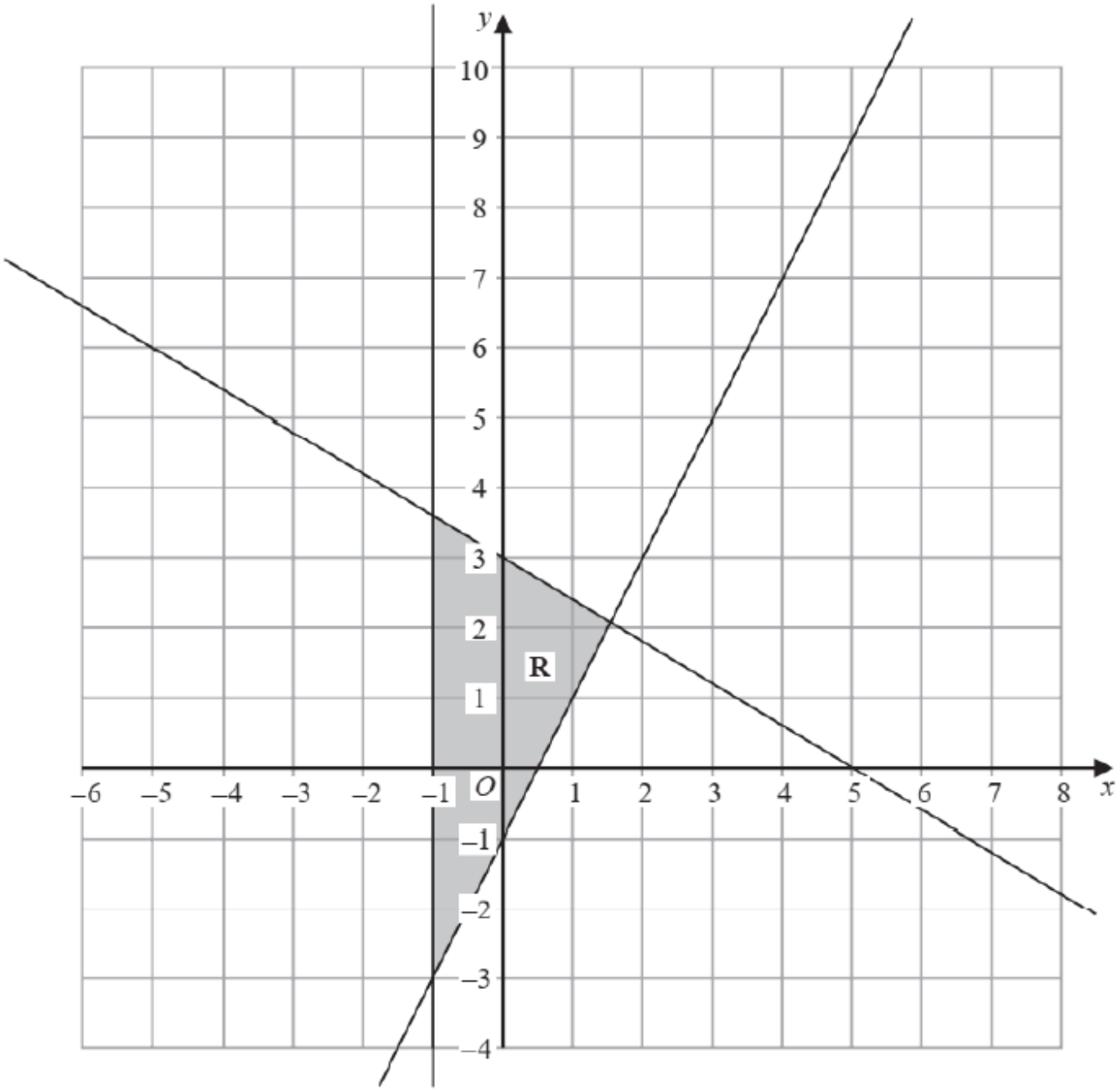
June 2022 - Question 4

4		Region drawn	5	M1 for drawing $x = -2$ and $y = 1$ M1 for drawing $2x + 3y = 6$ M1 for drawing $y = x + 4$ A2 for shading required region (A1 (dep M2) for shading correctly for 3 inequalities)



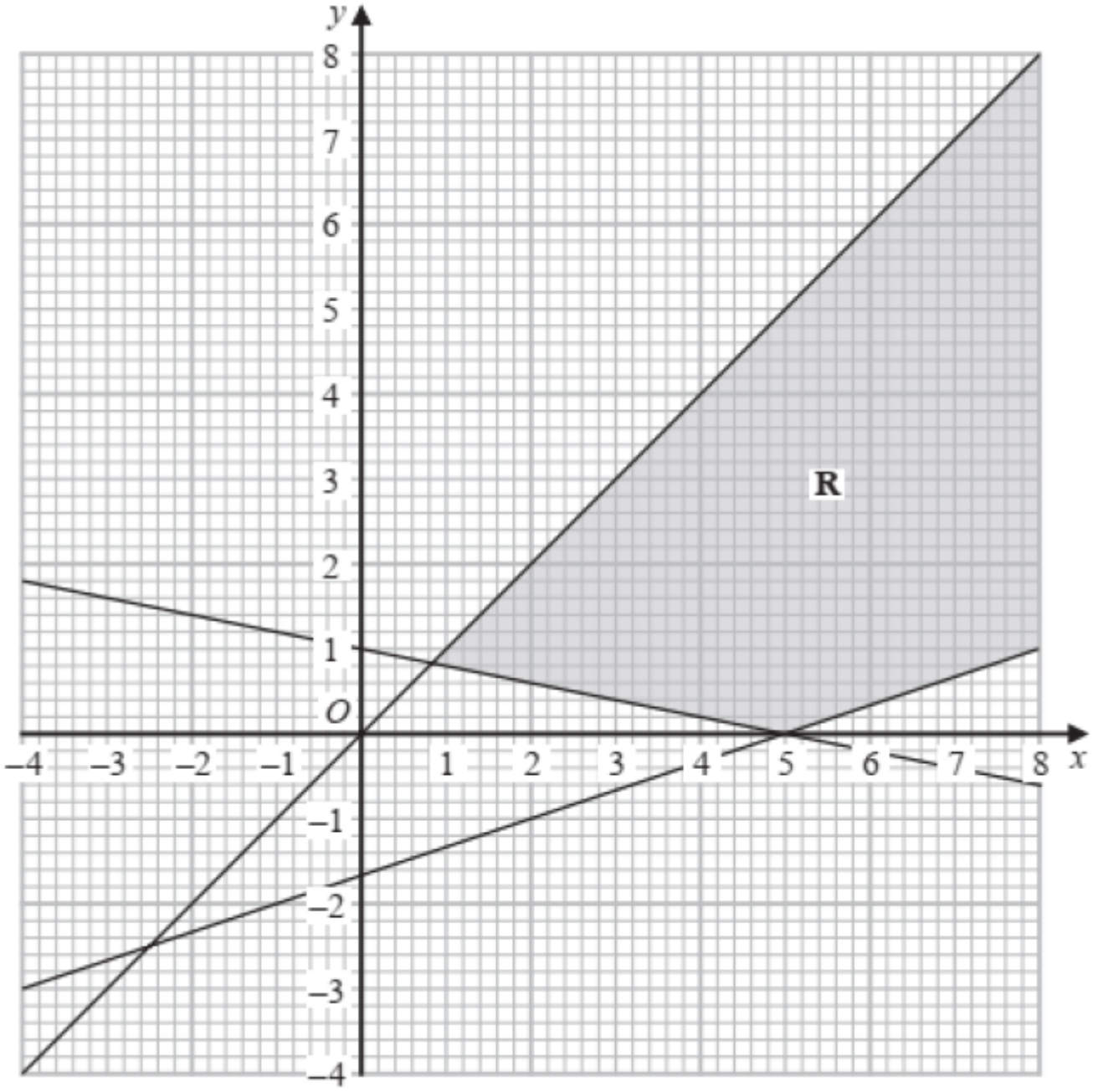
Jan 2023 - Question 3

Question	Working	Answer	Mark	Notes
3		Region drawn	5	M1 for drawing $x = -1$ correctly M1 for drawing $3x + 5y = 15$ correctly M1 for drawing $y = 2x - 1$ correctly A2 for correctly shading required region (A1 for correct shading for 2 inequalities)



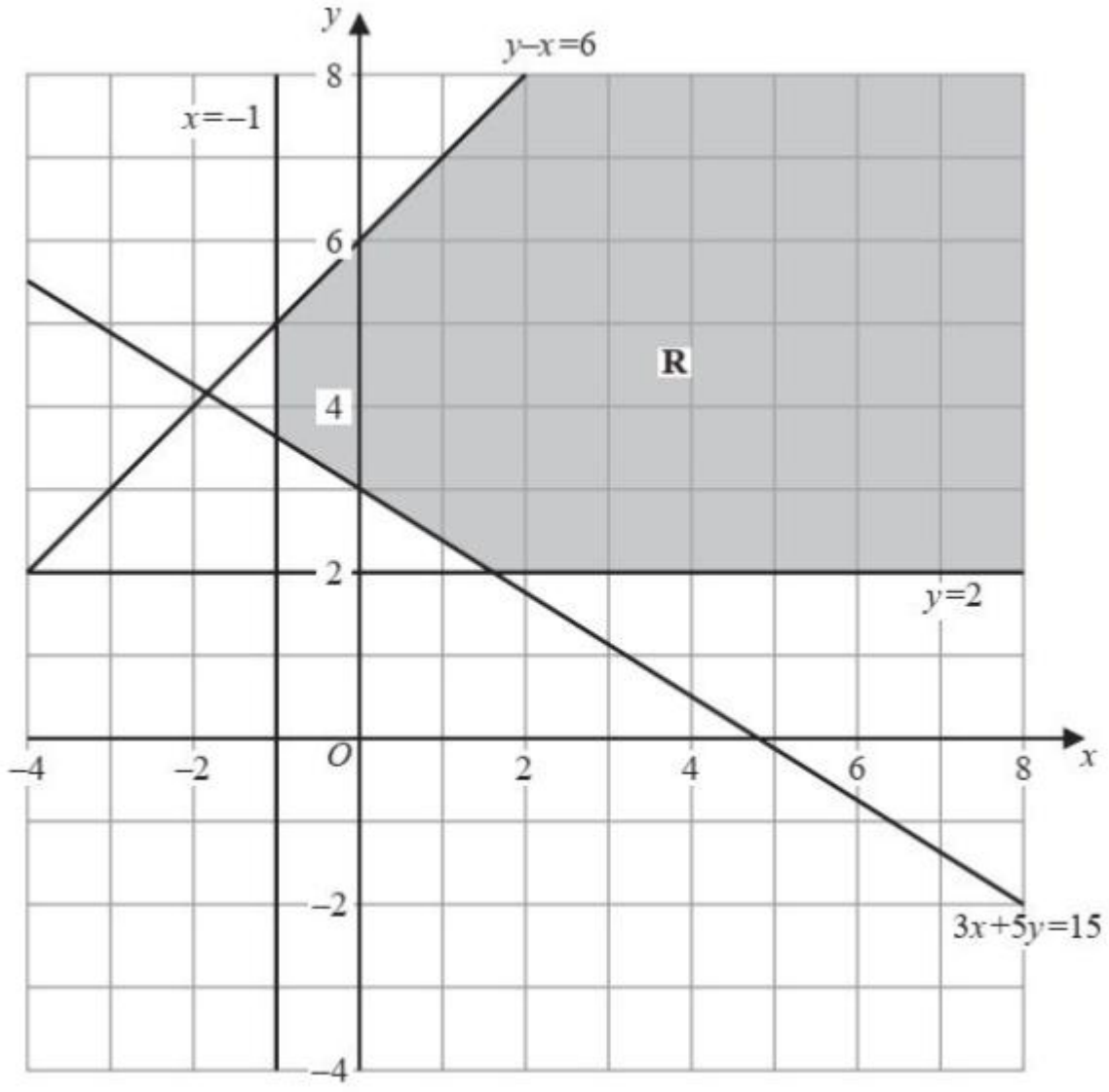
June 2023 - Question 3

3		Correct region indicated	5	M1 for drawing $y = x$ M1 for drawing $x + 5y = 5$ M1 for drawing $x - 3y = 5$ A2 for correctly shading required region (A1 for correct shading for 2 inequalities)



Jan 2024 - Question 4

Question	Working	Answer	Mark	Notes
4		Region drawn	5	M1 for drawing $x = -1$ and $y = 2$ M1 for drawing $3x + 5y = 15$ M1 for drawing $y - x = 6$ A2 for shading required region (A1 for correct shading for 3 inequalities)



Jan 2024 - Question 6

6	(a)		$x < 6$	2	M1 for isolating terms in x or critical value of 6 A1 for $x < 6$
	(b)(i)		$(y + 4)(y - 2)$	1	B1 for $(y + 4)(y - 2)$ or equivalent factorisation
	(ii)		$-4 < y < 2$	2	M1 for critical values of -4 and 2 (ft (b)(i)) A1 oe