

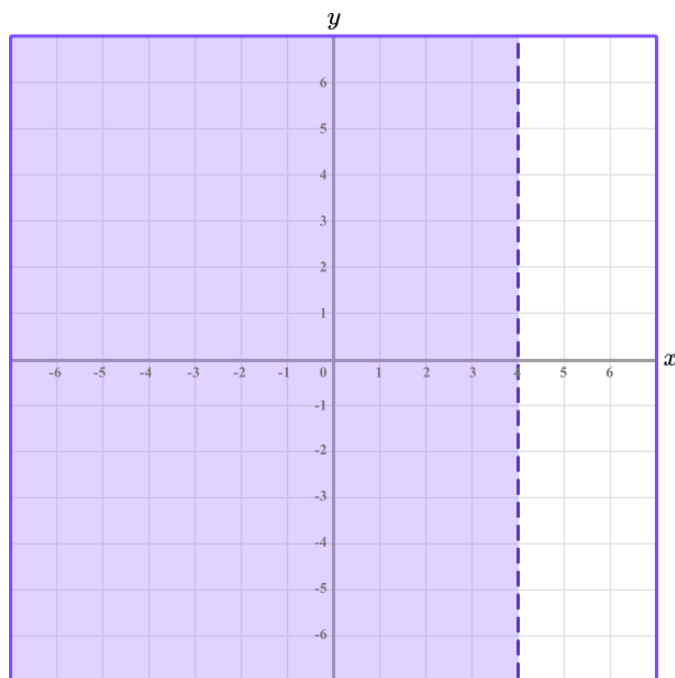
Graphing Inequalities - Worksheet

Skill

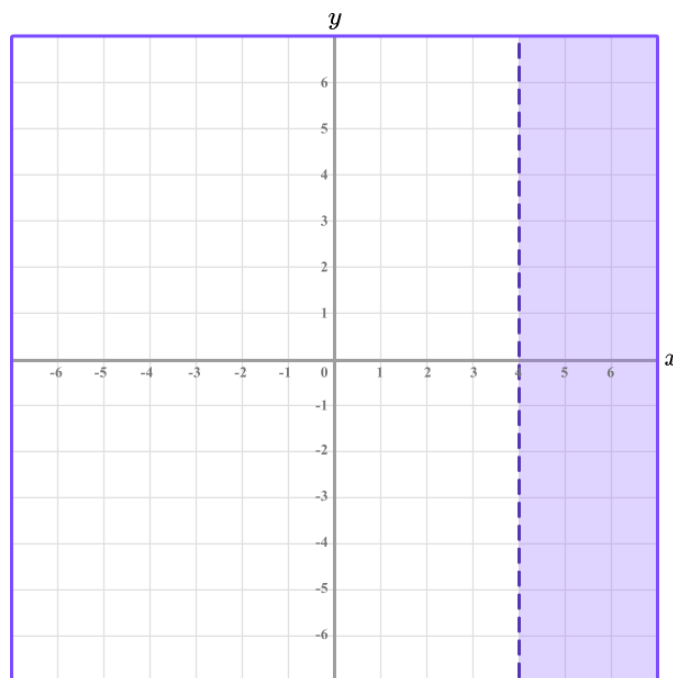
Group A - Identifying inequalities

The diagrams show a shaded region that satisfies an inequality. Identify the inequalities:

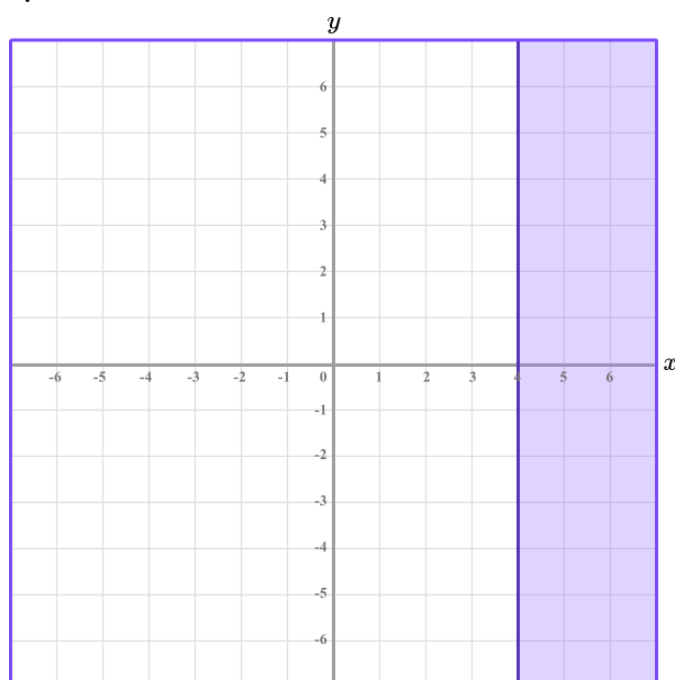
1)



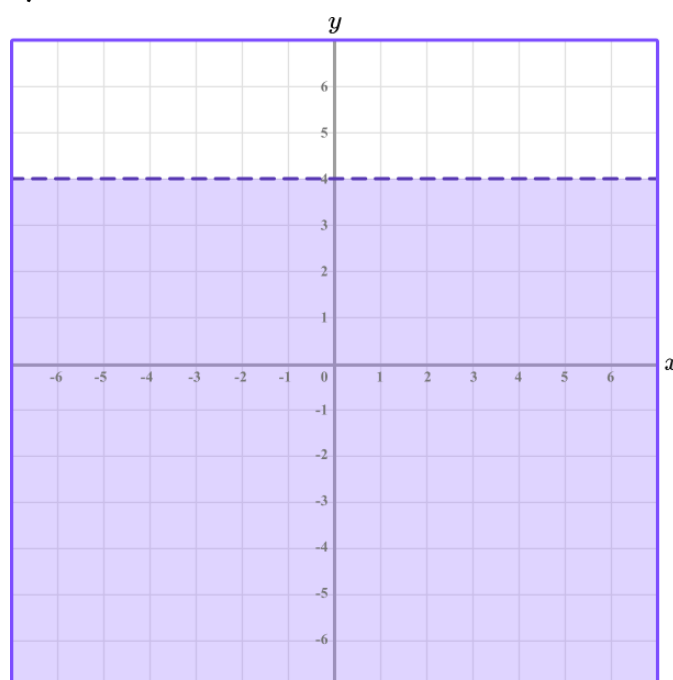
2)



3)

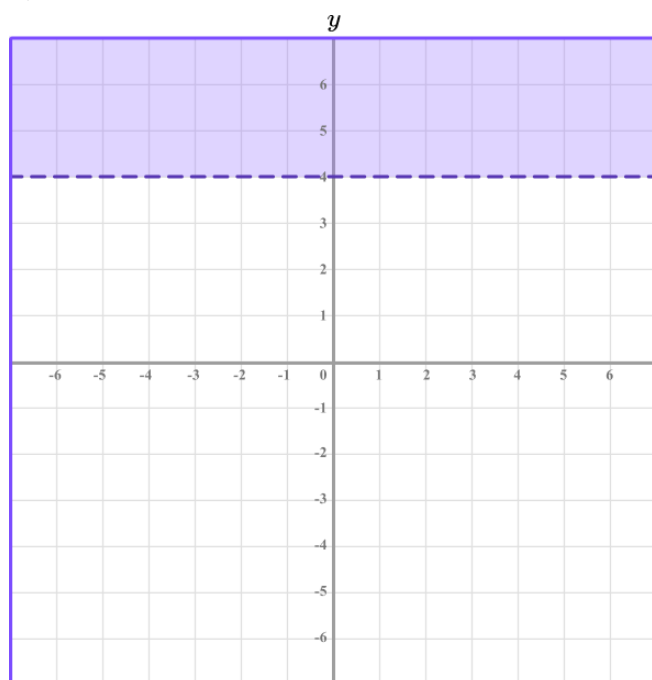


4)

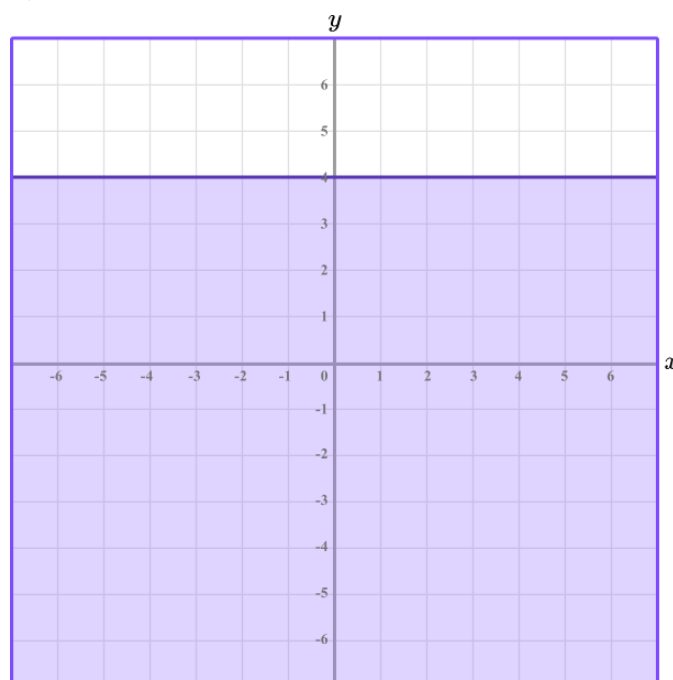


Graphing Inequalities - Worksheet

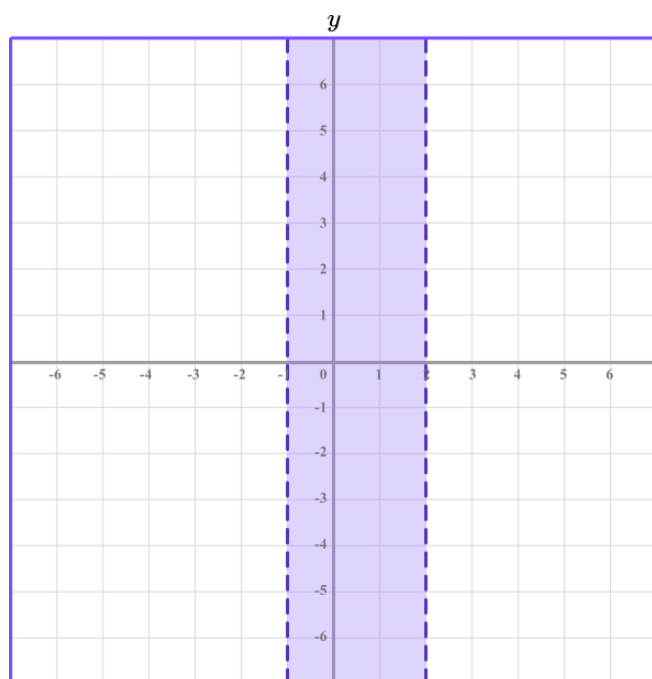
5)



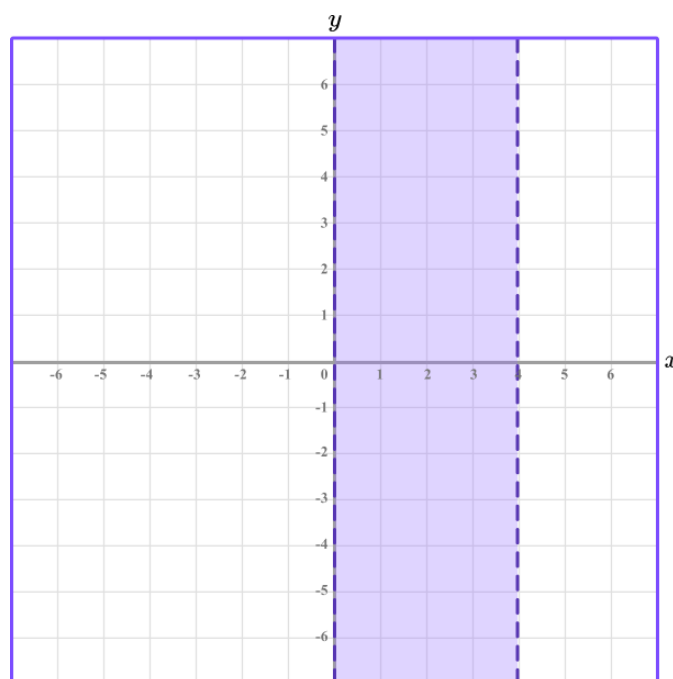
6)



7)

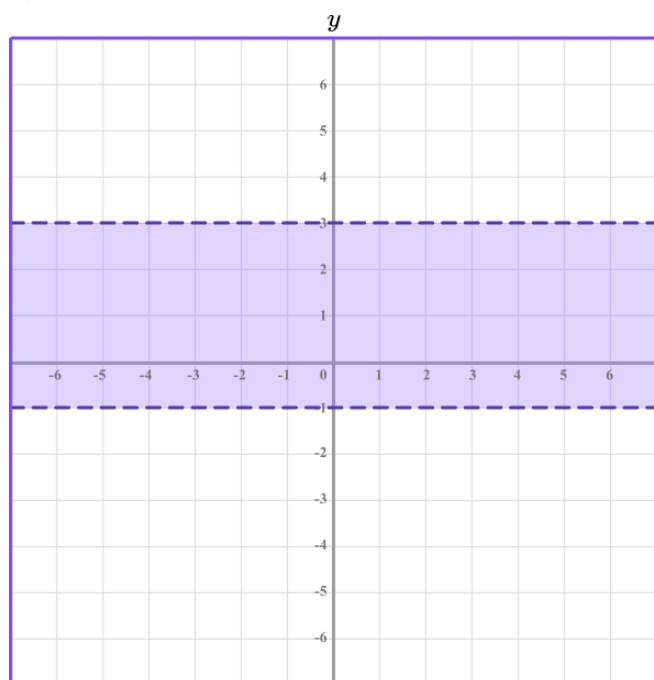


8)

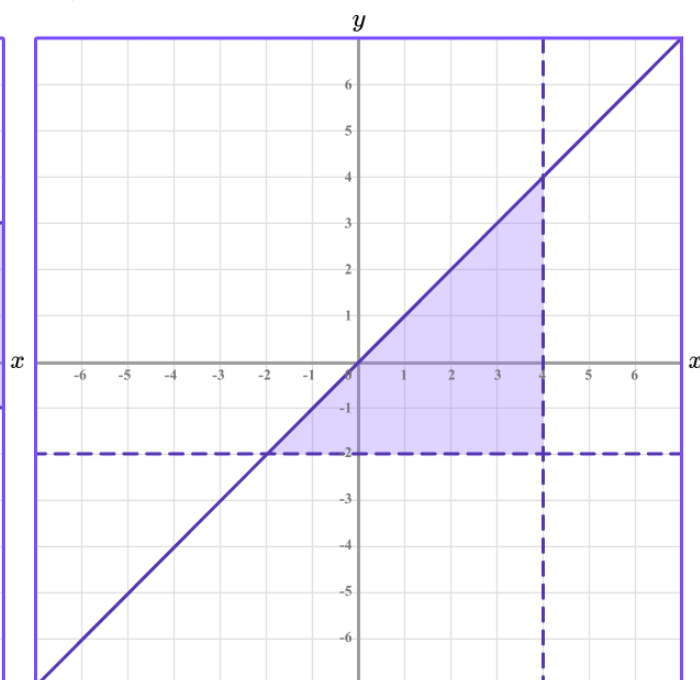


Graphing Inequalities - Worksheet

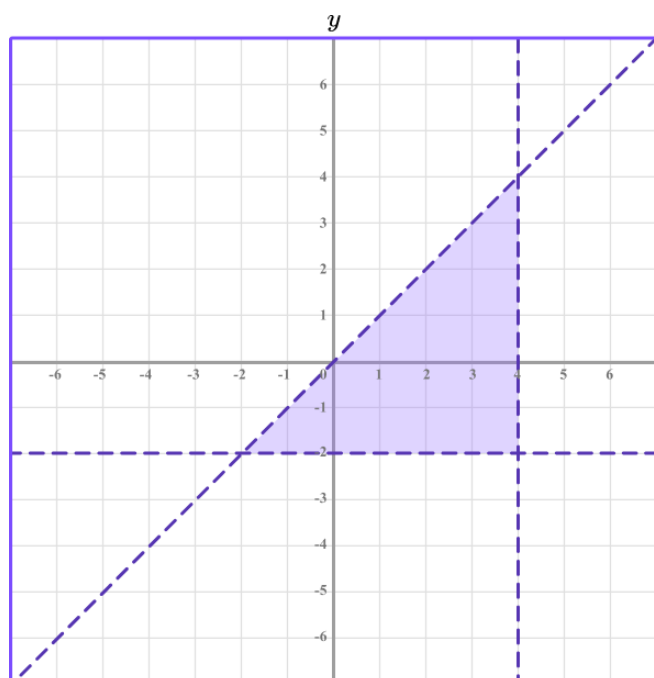
9)



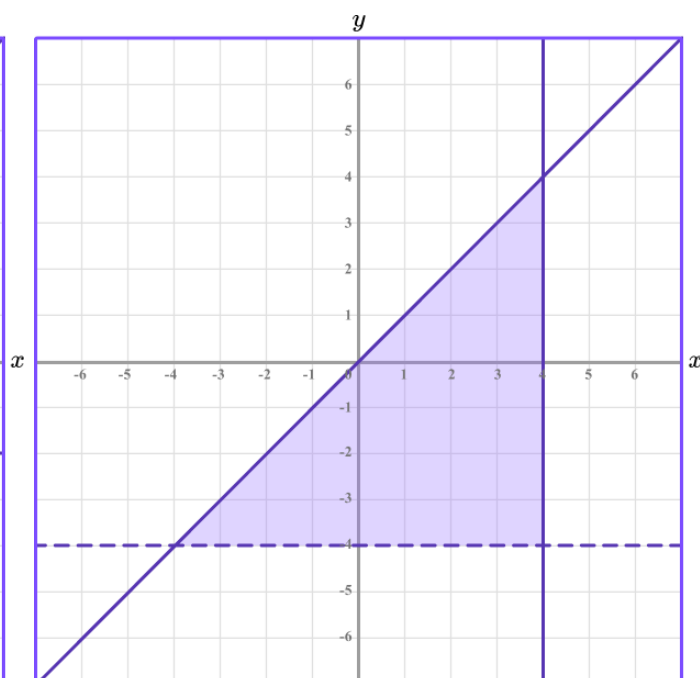
10)



11)



12)

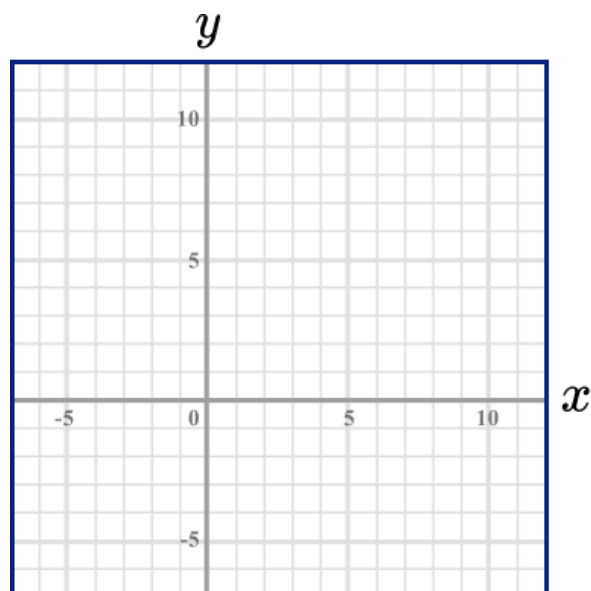


Graphing Inequalities - Worksheet

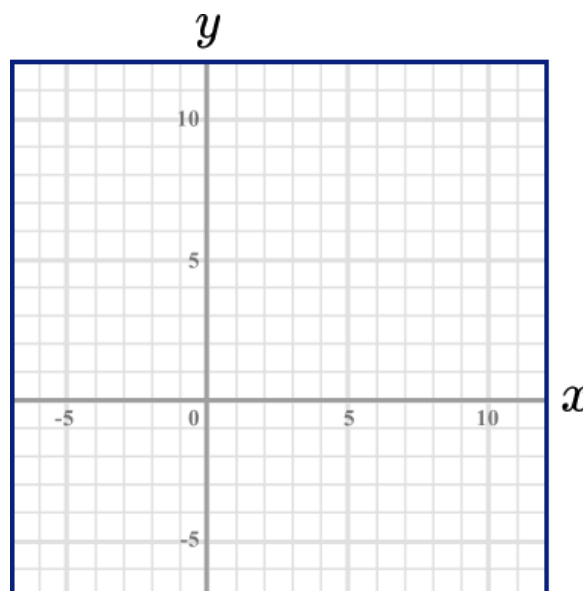
Group B - Identifying regions that satisfy an inequality

Shade the regions that satisfy the following inequalities:

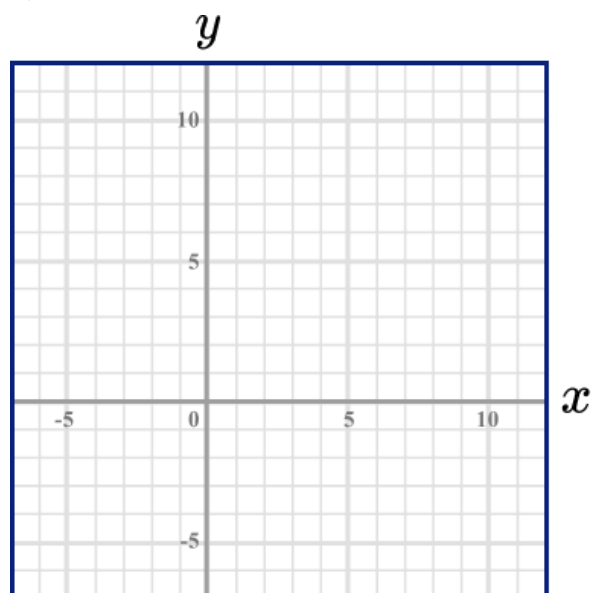
1) $x > 2$



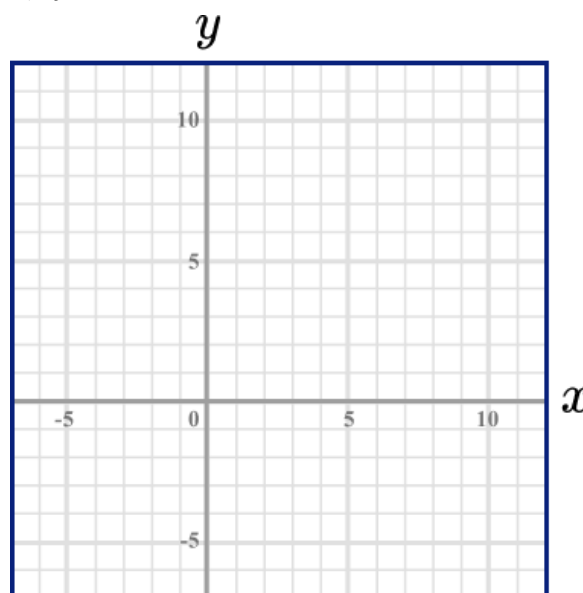
2) $x < 2$



3) $x \geq 5$

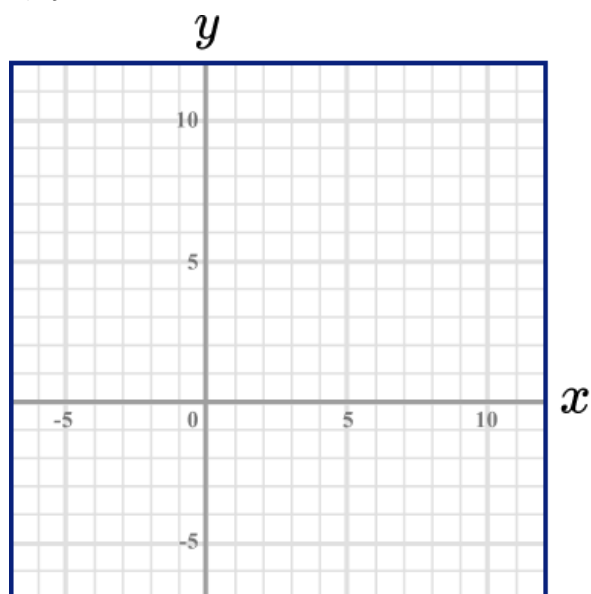


4) $y \leq 5$

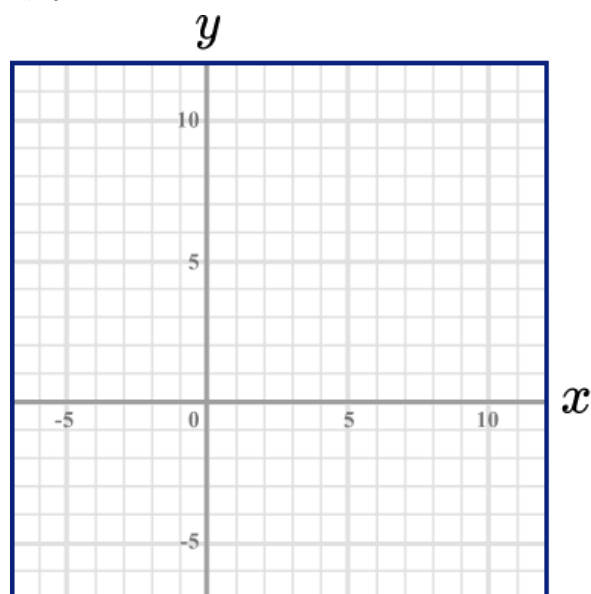


Graphing Inequalities - Worksheet

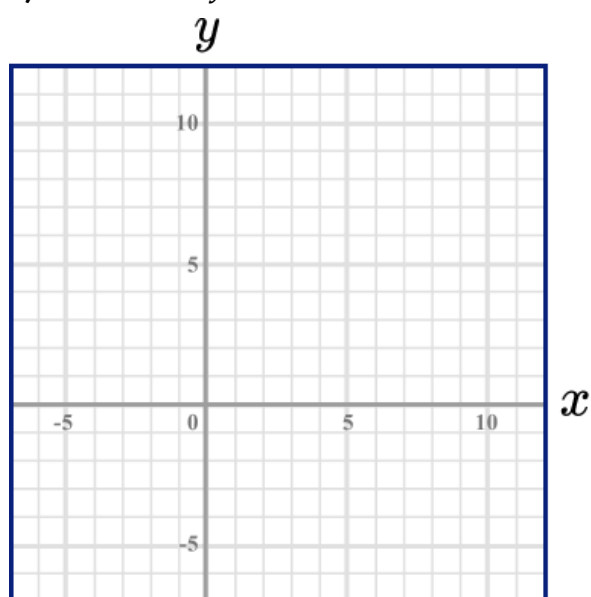
5) $y > -1$



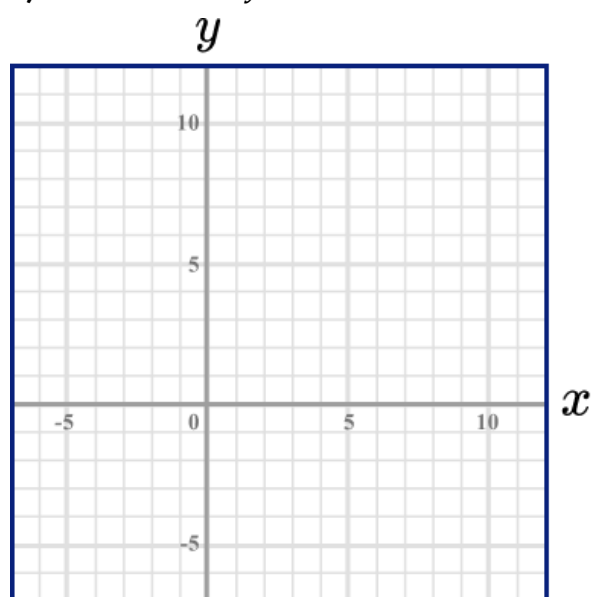
6) $y < -1$



7) $x \geq 1$ and $y < 3$

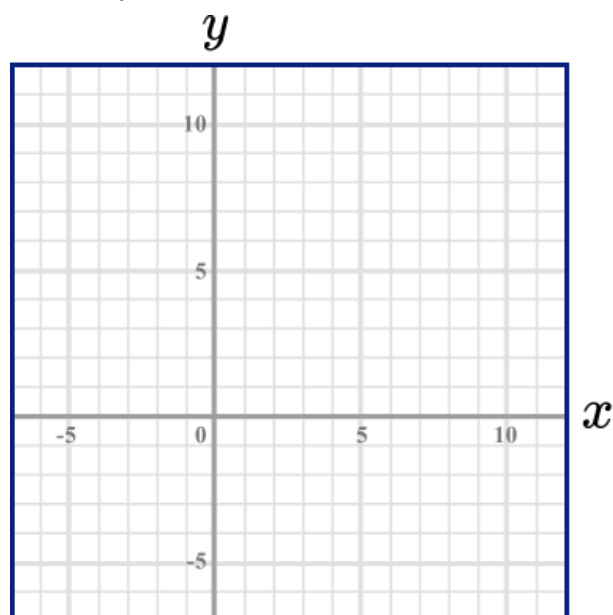


8) $x \leq -1$ and $y > -3$

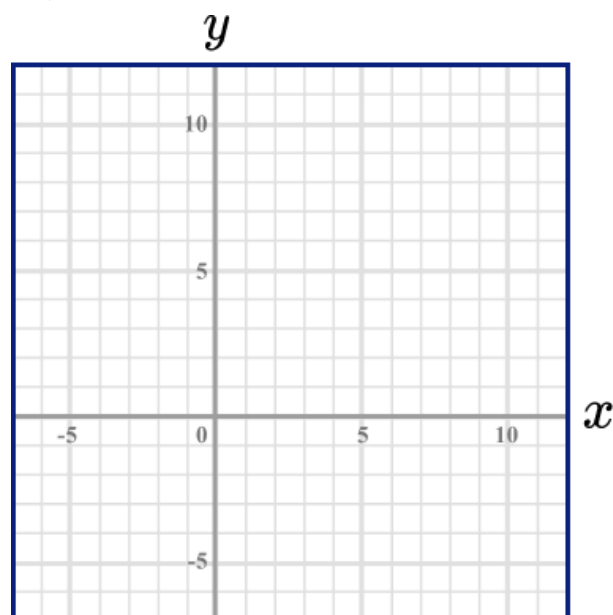


Graphing Inequalities - Worksheet

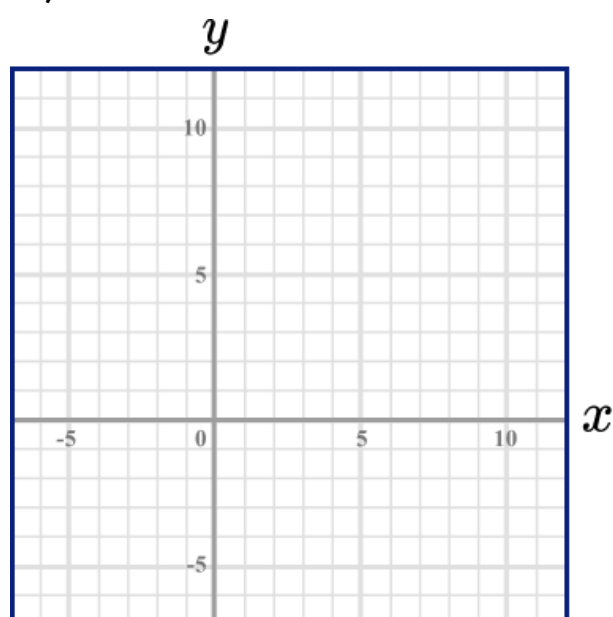
9) $2 < y < 4$



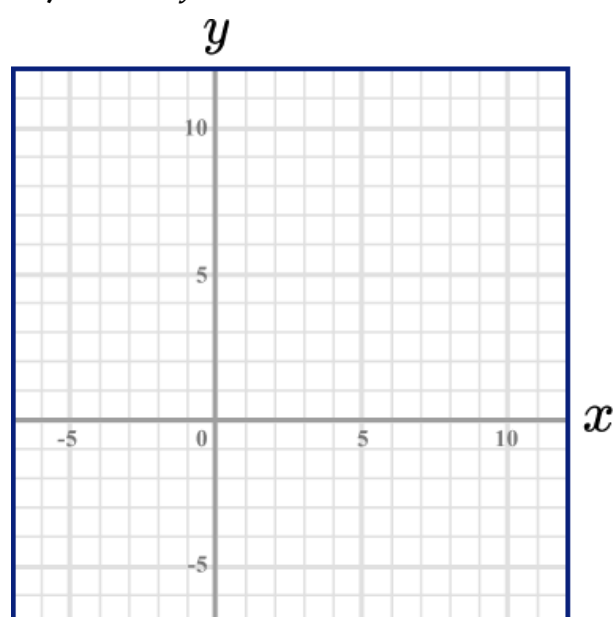
10) $-2 \leq x \leq 6$



11) $-1 < x \leq 6$



12) $-2 \leq y < 5$

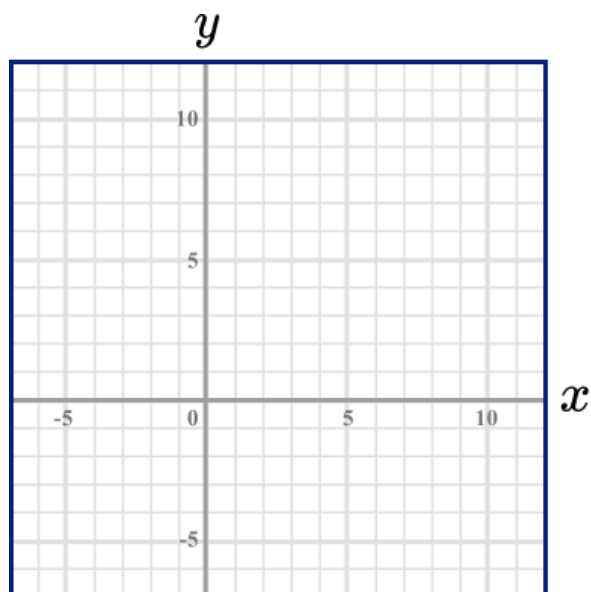


Graphing Inequalities - Worksheet

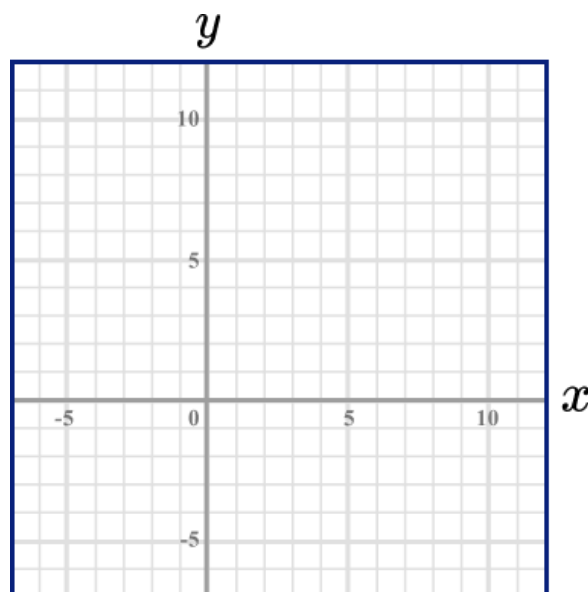
Group C - Systems of inequalities

Shade the region that satisfies the following sets of inequalities:

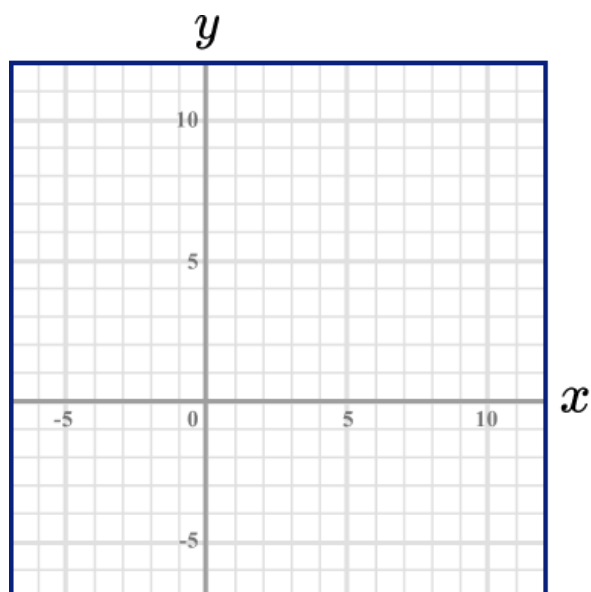
1) $x > -3$
 $y \geq -3$
 $y \leq 5$



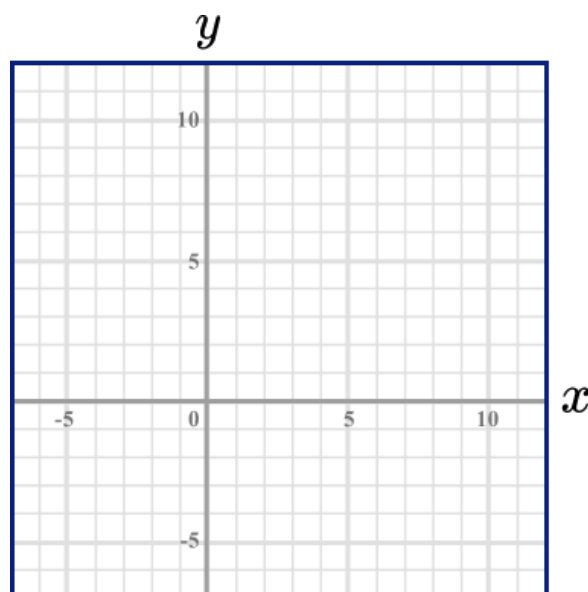
2) $x < 9$
 $y > 5$
 $y < x$



3) $x \geq -1$
 $y < 2$
 $y > -1$

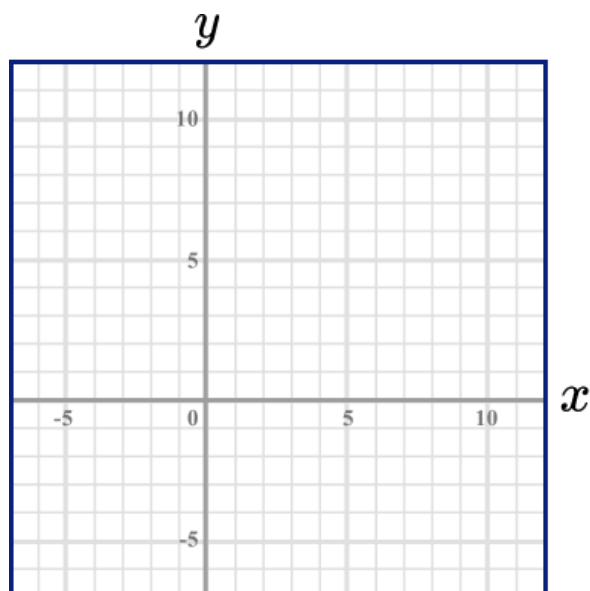


4) $x \leq 8$
 $y \leq 2$
 $x > 1$

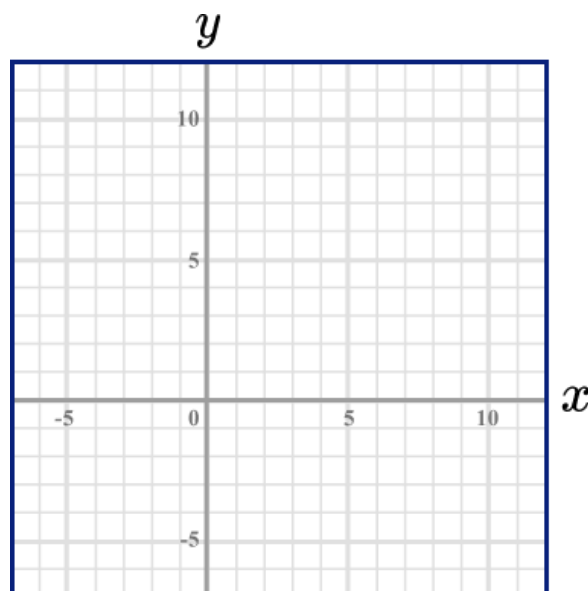


Graphing Inequalities - Worksheet

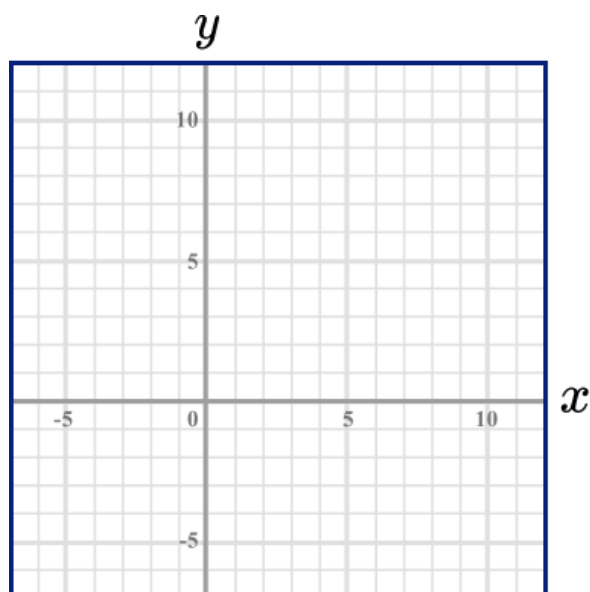
5) $x \geq 0$
 $y \leq 2$
 $y > -1$



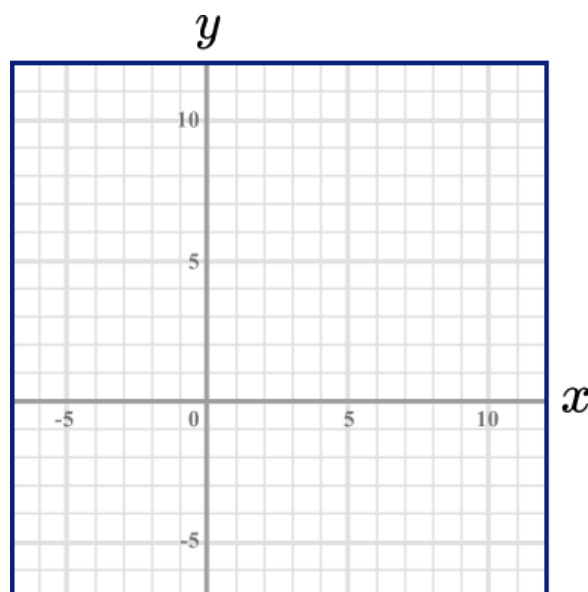
6) $x < 0$
 $y > -5$
 $y < 3$



7) $y < x$
 $x < 5$
 $y \geq 0$

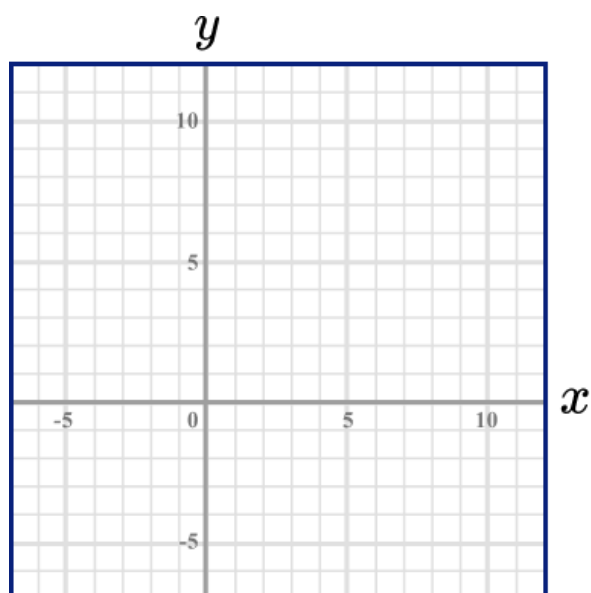


8) $x \geq 0$
 $y \geq -1$
 $x + y < 7$

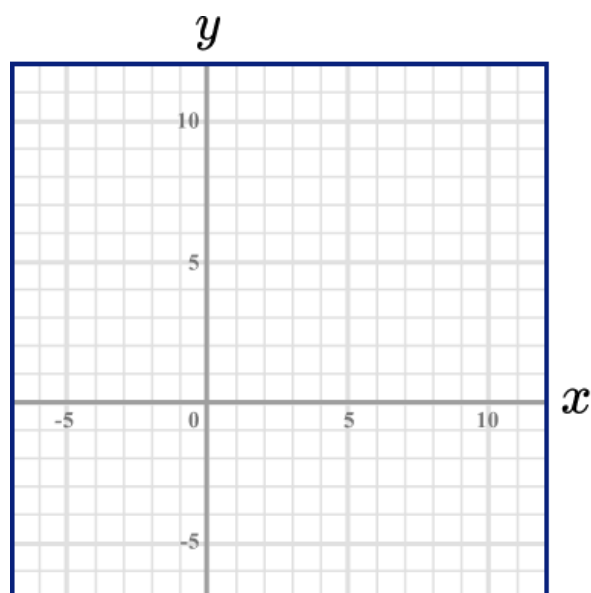


Graphing Inequalities - Worksheet

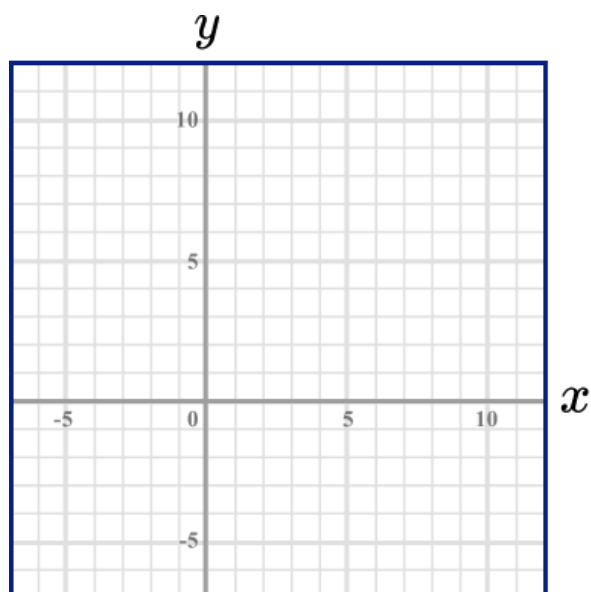
9) $x + y \leq 7$
 $y \leq x$



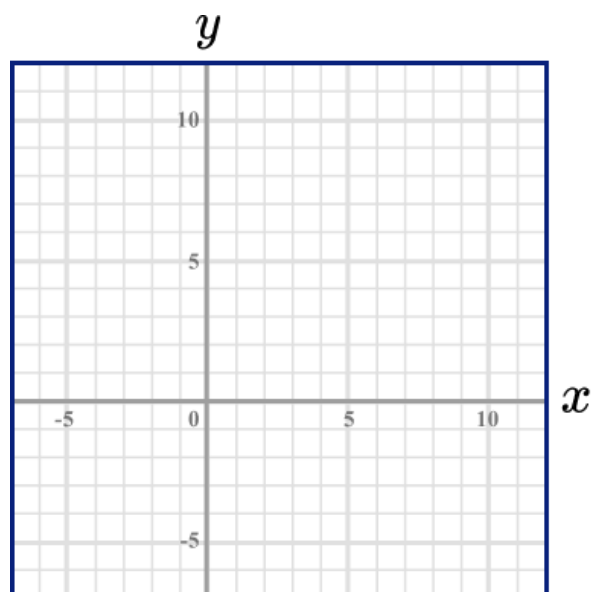
10) $x \geq -4$
 $y < 7$
 $y \geq 2x + 4$



11) $x \leq 3$
 $y > 0$
 $y \leq x + 4$



12) $y < 3x + 5$
 $y + x < 8$
 $y \geq 1$



Graphing Inequalities - Worksheet

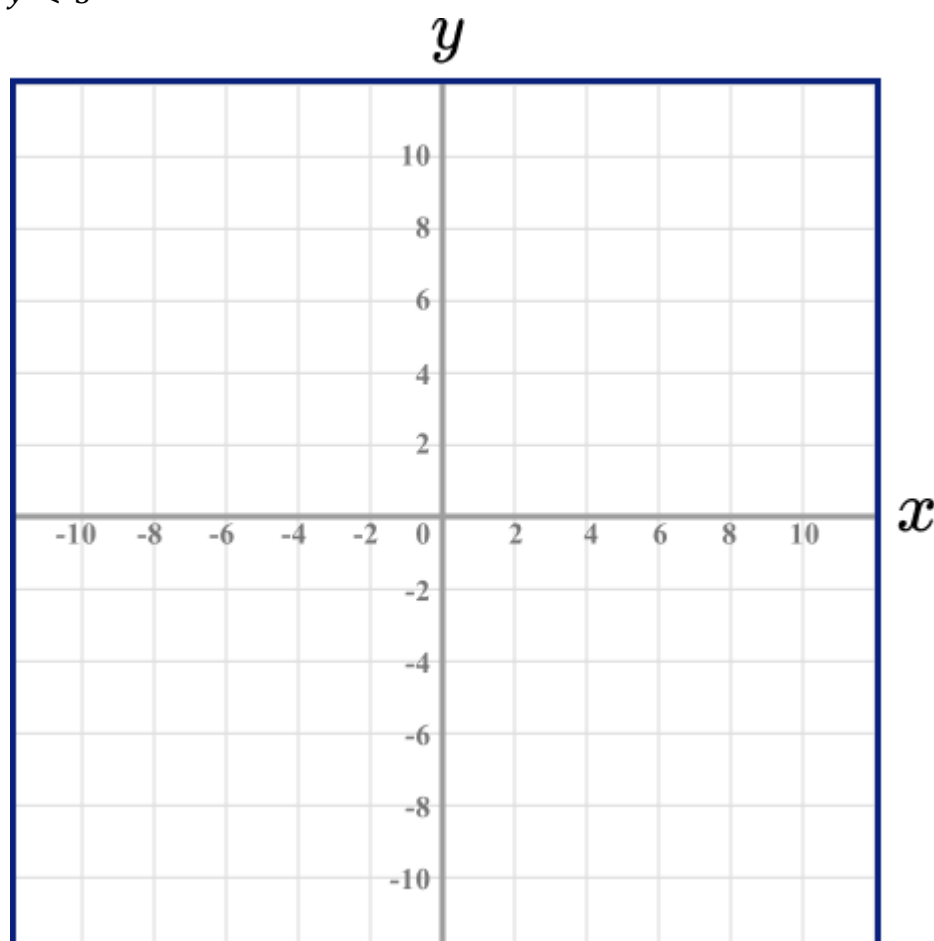
Applied

- 1) (a) On the grid below, draw straight lines, and use shading to show the region **R** that satisfies the inequalities:

$$x > -6$$

$$y \geq x$$

$$y < 5$$



- (b) The point P with coordinates (x, y) lies inside the region **R**.

x and y are integers.

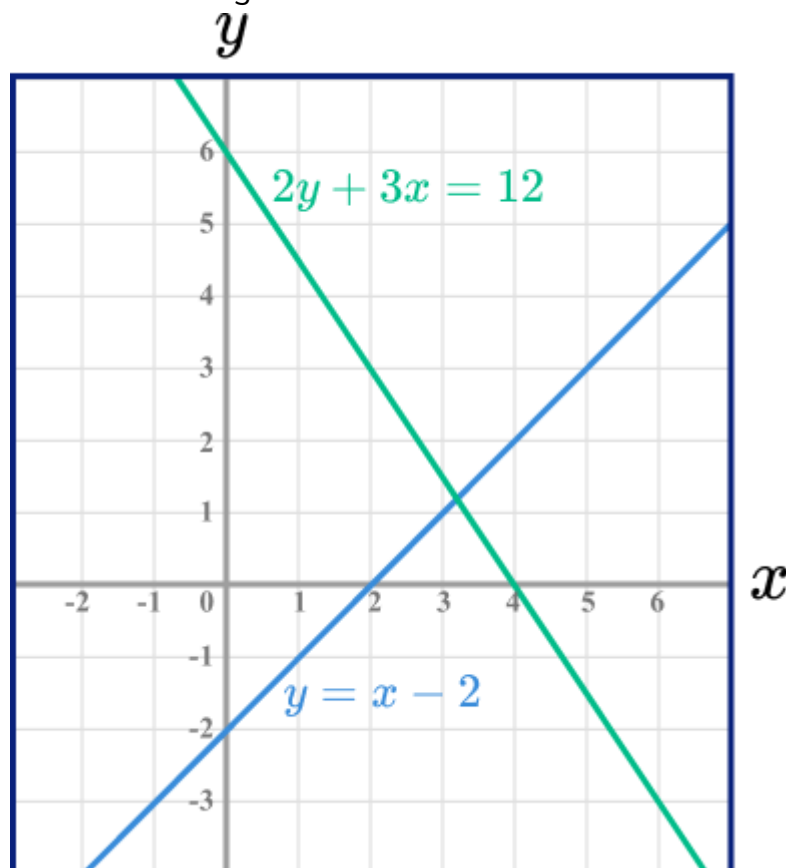
Write down the coordinates of all the possible points P of whose coordinates are both positive integers.

Graphing Inequalities - Worksheet

2) The graphs of the straight lines with equations

$$2y + 3x = 12 \text{ and } y = x - 2$$

have been drawn on the grid.



$$2y + 3x < 12$$

$$y < x - 2$$

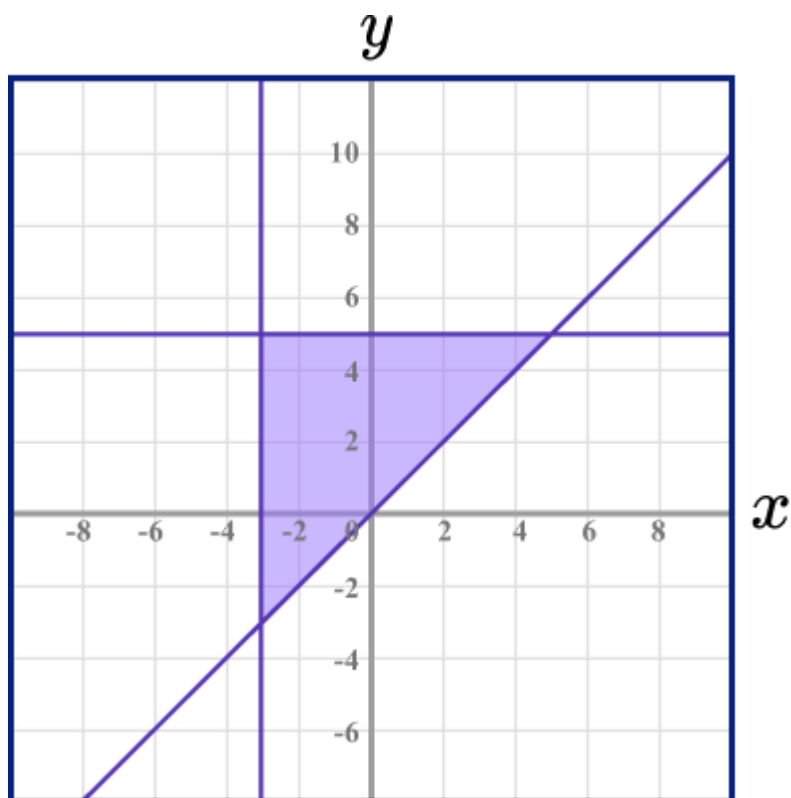
$$y \geq -1$$

x and y are integers.

On the grid, mark with a cross (x), each of the four points which satisfies all three inequalities.

Graphing Inequalities - Worksheet

- 3) Below is a graph showing a shaded region A .

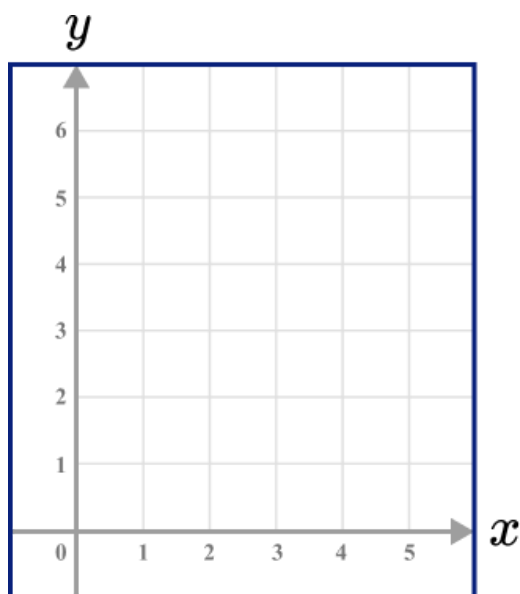


Find the three inequalities which satisfy the shaded region A .

Graphing Inequalities - Exam Questions

- 1) On the grid, clearly indicate the region that satisfies all these inequalities.

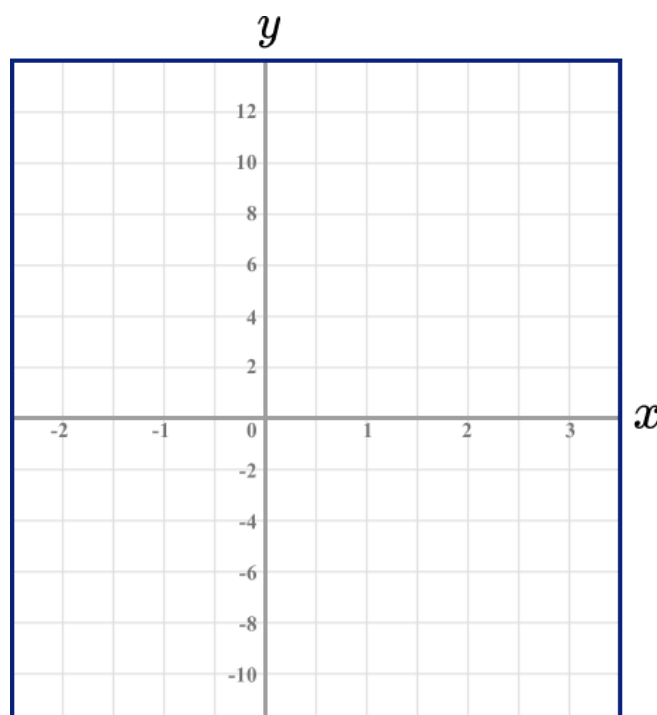
$$x < 3 \quad y \leq x \quad y > 1$$



(3 marks)

- 2) On the grid, label the region that satisfies all three of these inequalities.

$$x + y < 4 \quad x > -1 \quad y \geq 2$$

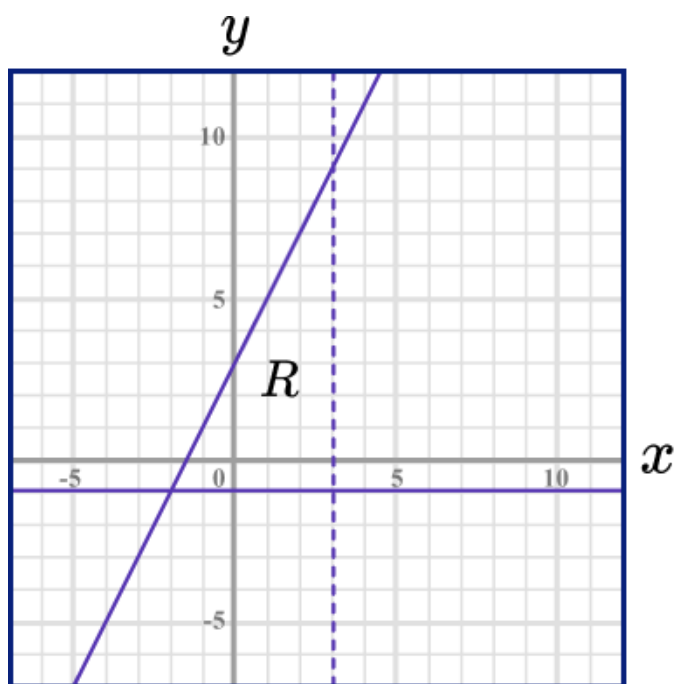


(3 marks)

Graphing Inequalities - Exam Questions

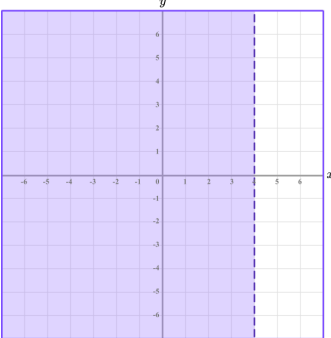
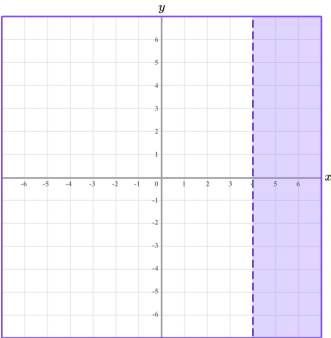
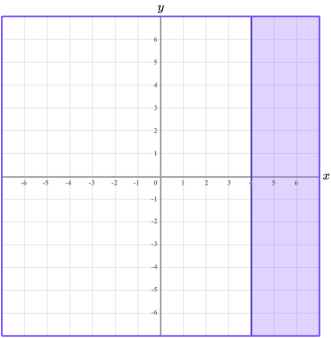
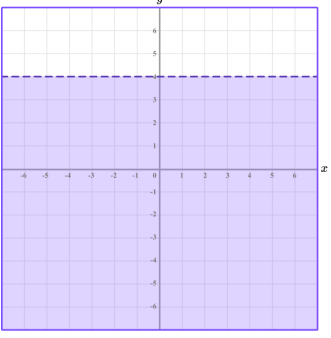
- 3) The region labelled **R** satisfies three inequalities.

State the three inequalities.



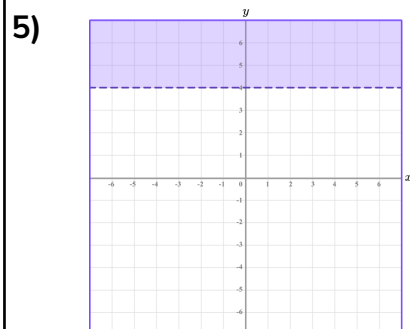
.....
(3 marks)

Graphing Inequalities - Answers

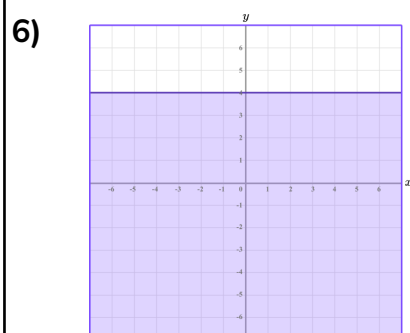
	Question	Answer
	Skill Questions	
Group A	<p>The diagrams show a shaded region that satisfies an inequality. Identify the inequalities:</p> <p>1) </p> <p>2) </p> <p>3) </p> <p>4) </p>	<p>1) $x < 4$</p> <p>2) $x > 4$</p> <p>3) $x \geq 4$</p> <p>4) $y < 4$</p>

Graphing Inequalities - Answers

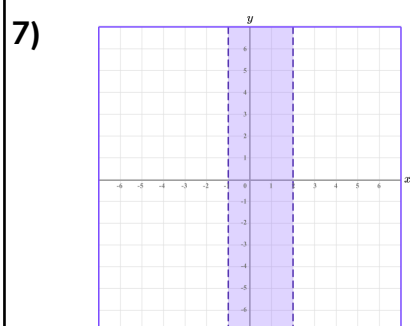
Group A
contd



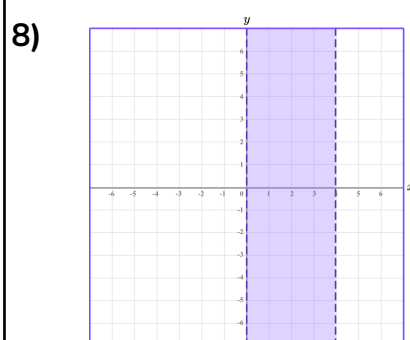
5) $y > 4$



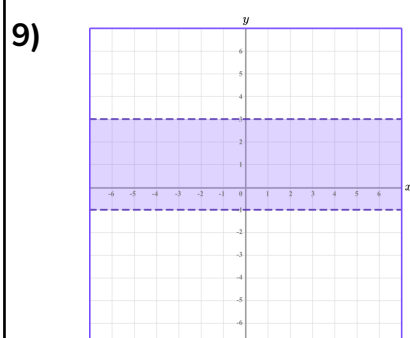
6) $y \leq 4$



7) $-1 < x < 2$



8) $0 < x < 4$

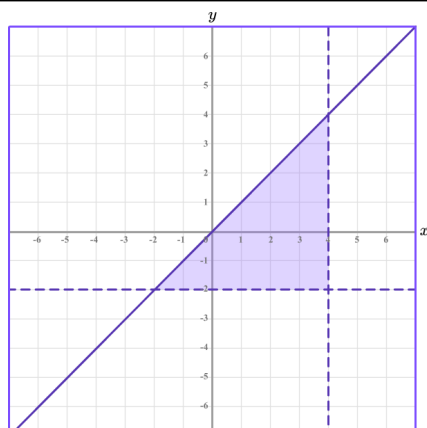


9) $-1 < y < 3$

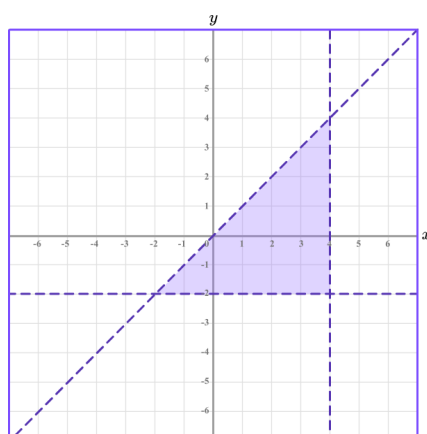
Graphing Inequalities - Answers

Group A
contd

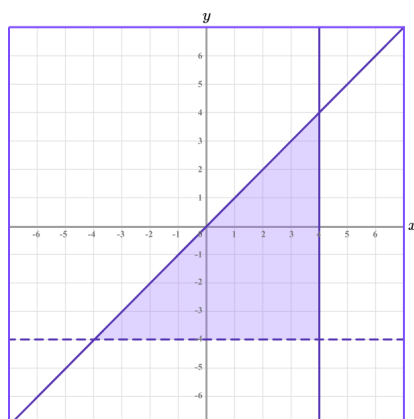
10)



11)



12)



10) $y \leq x$
 $y > -2$
 $x < 4$

11) $y < x$
 $y > -2$
 $x < 4$

12) $y \leq x$
 $y > -4$
 $x \leq 4$

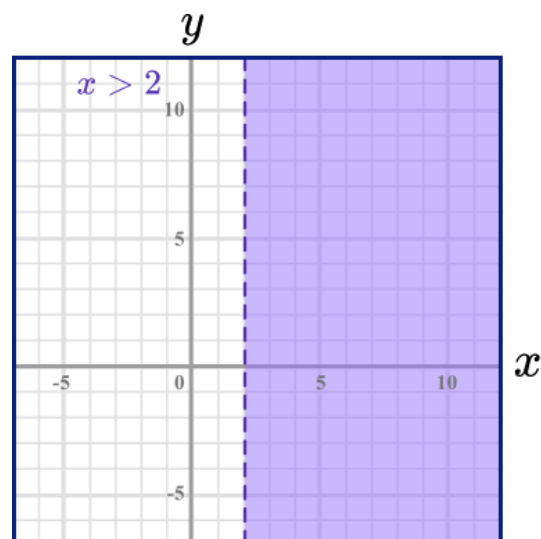
Graphing Inequalities - Answers

Group B

Shade the regions that satisfy the following inequalities:

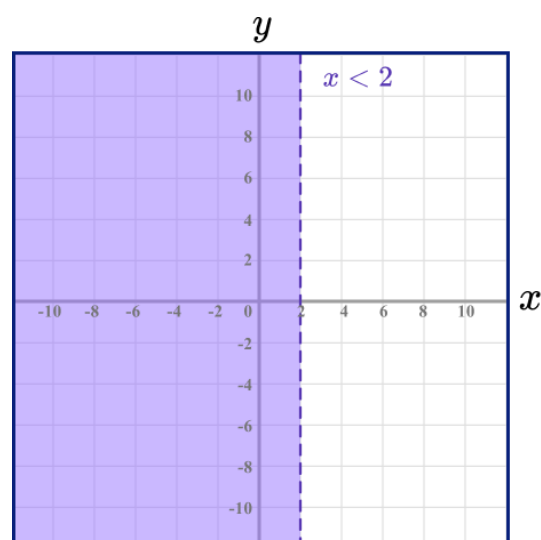
1) $x > 2$

1)



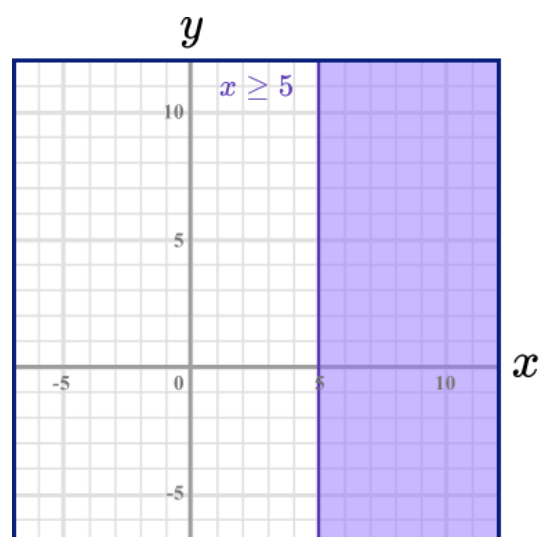
2) $x < 2$

2)



3) $x \geq 5$

3)

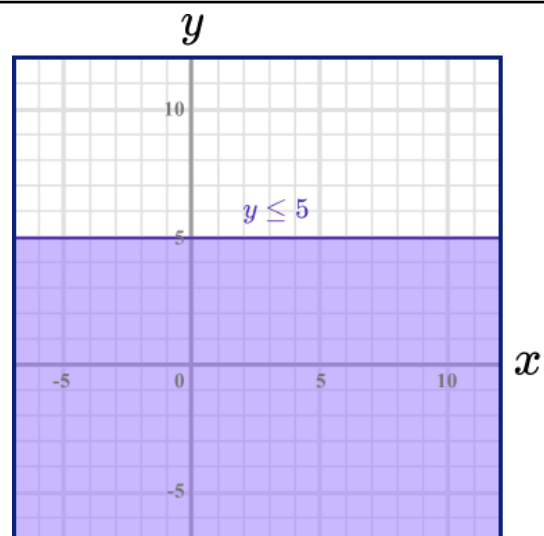


Graphing Inequalities - Answers

Group B
contd

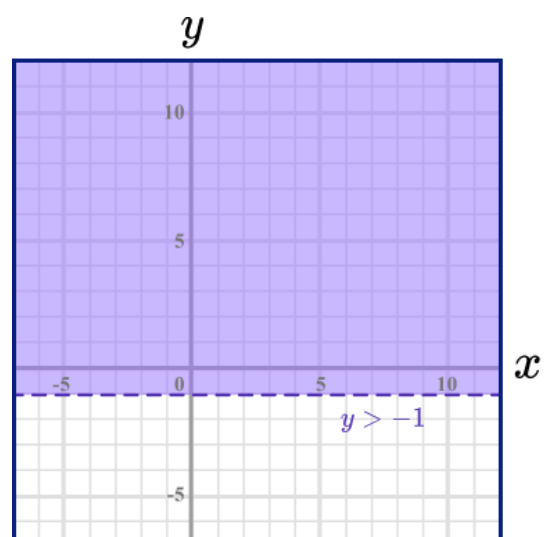
4) $y \leq 5$

4)



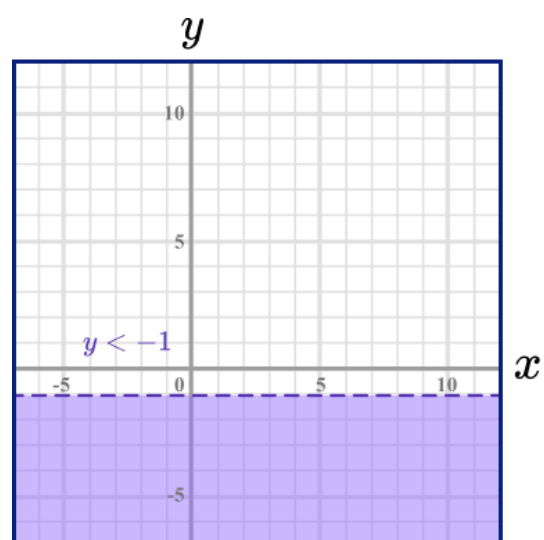
5) $y > -1$

5)



6) $y < -1$

6)

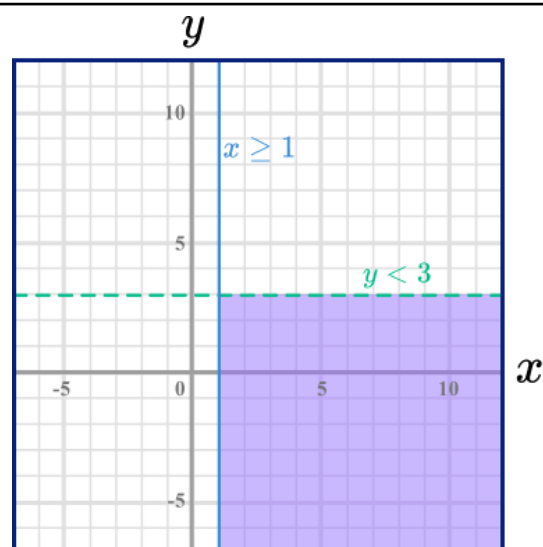


Graphing Inequalities - Answers

Group B
contd

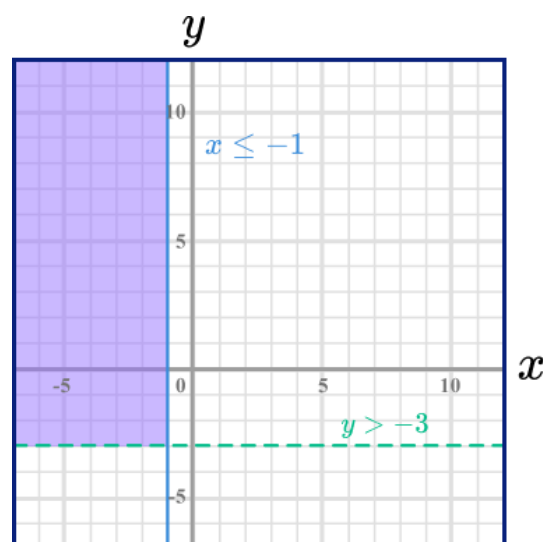
7) $x \geq 1$ and $y < 3$

7)



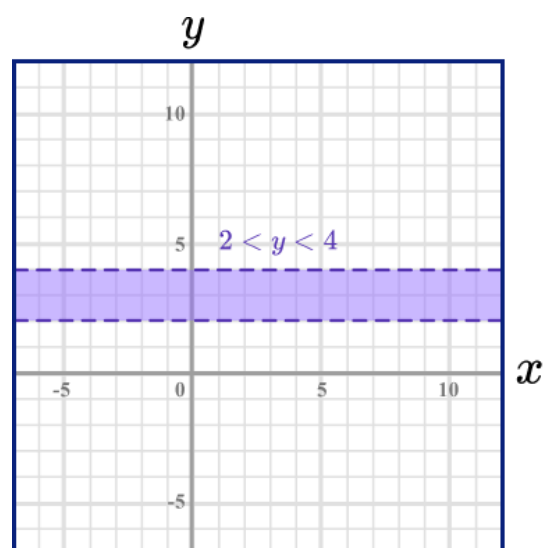
8) $x \leq -1$ and $y > -3$

8)



9) $2 < y < 4$

9)

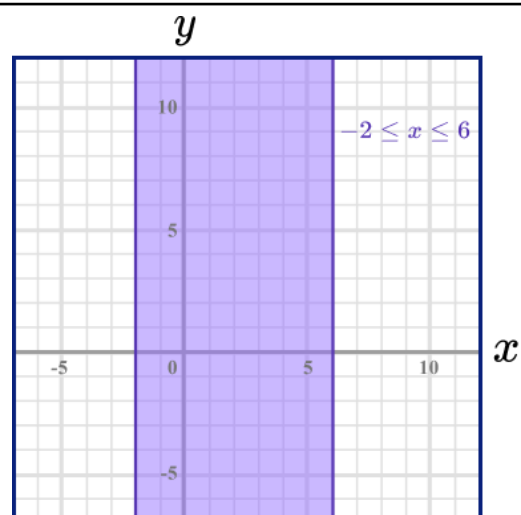


Graphing Inequalities - Answers

Group B
contd

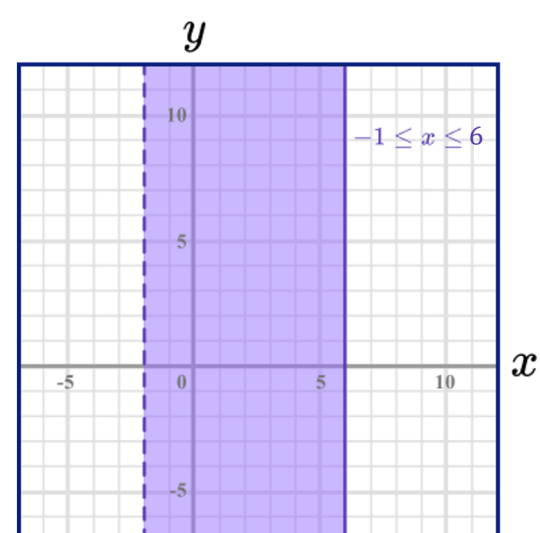
10) $-2 \leq x \leq 6$

10)



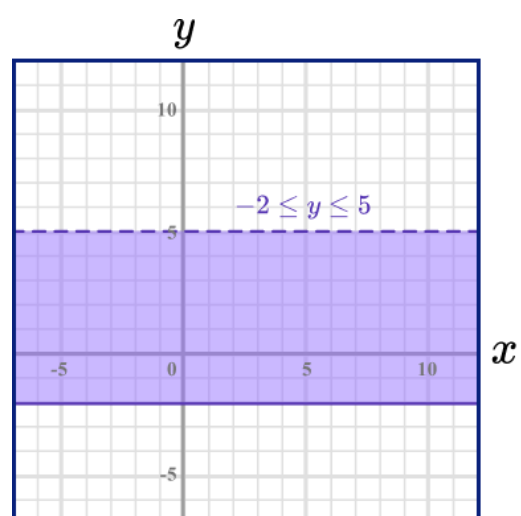
11) $-1 < x \leq 6$

11)



12) $-2 \leq y < 5$

12)



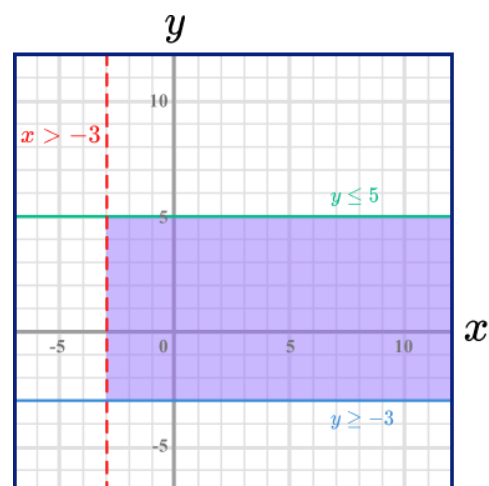
Graphing Inequalities - Answers

Group C

Shade the region that satisfies the following sets of inequalities:

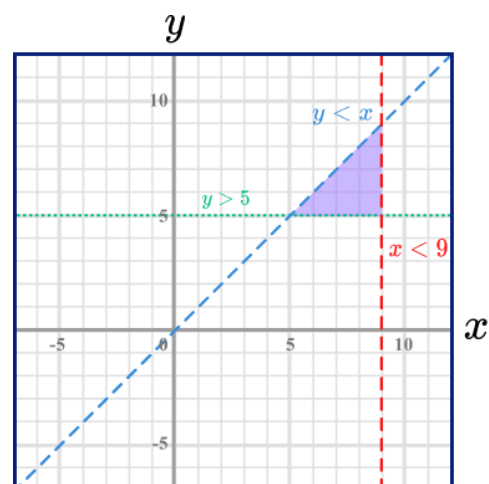
1) $x > -3$, $y \geq -3$, $y \leq 5$

1)



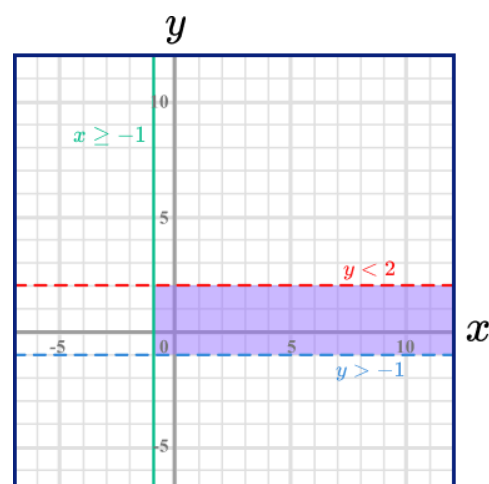
2) $x < 9$, $y > 5$, $y < x$

2)



3) $x \geq -1$, $y < 2$, $y > -1$

3)

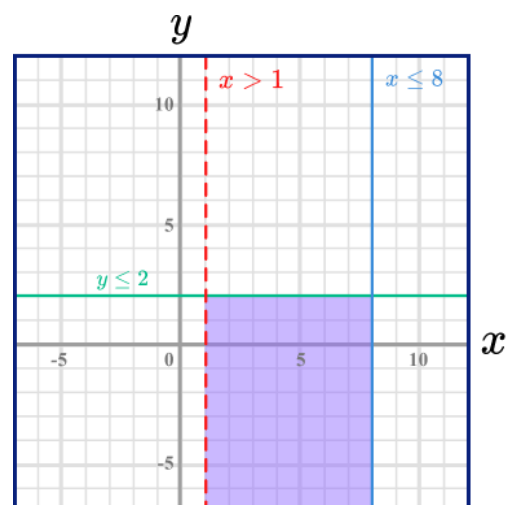


Graphing Inequalities - Answers

Group C
contd

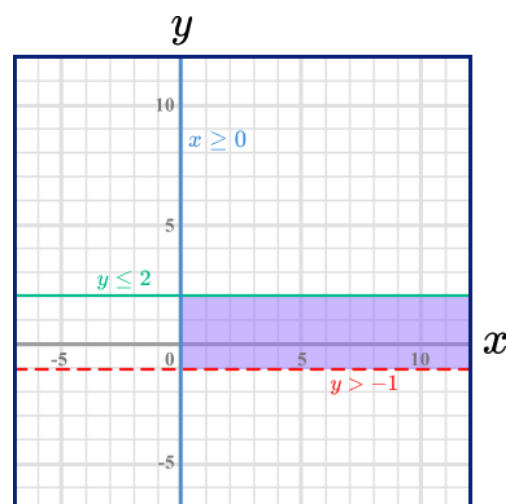
4) $x \leq 8, y \leq 2, x > 1$

4)



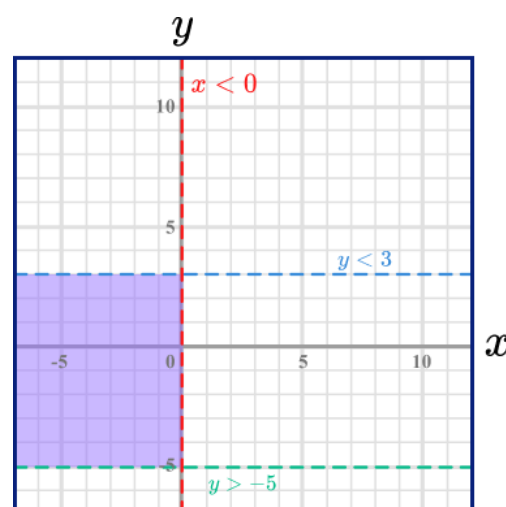
5) $x \geq 0, y \leq 2, y > -1$

5)



6) $x < 0, y > -5, y < 3$

6)

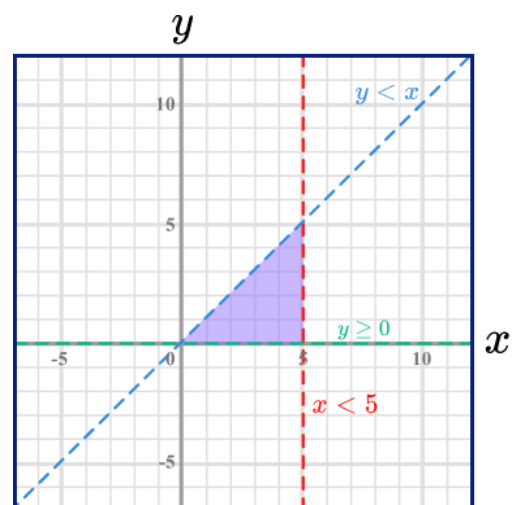


Graphing Inequalities - Answers

Group C
contd

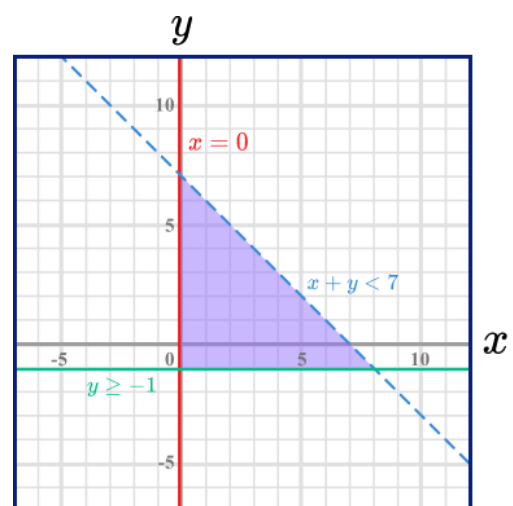
7) $y < x$, $x < 5$, $y \geq 0$

7)



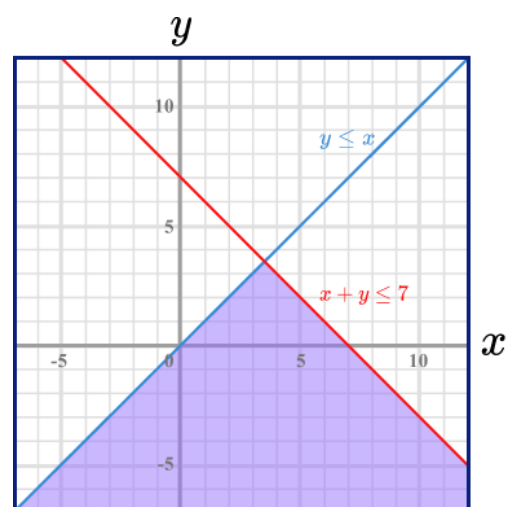
8) $x \geq 0$, $y \geq -1$, $x + y < 7$

8)



9) $x + y \leq 7$, $y \leq x$

9)

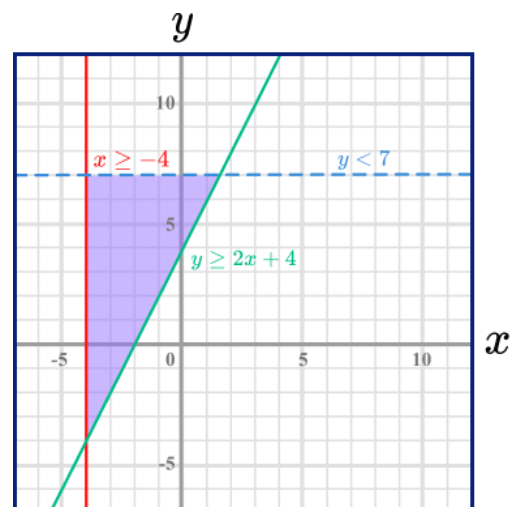


Graphing Inequalities - Answers

Group C
contd

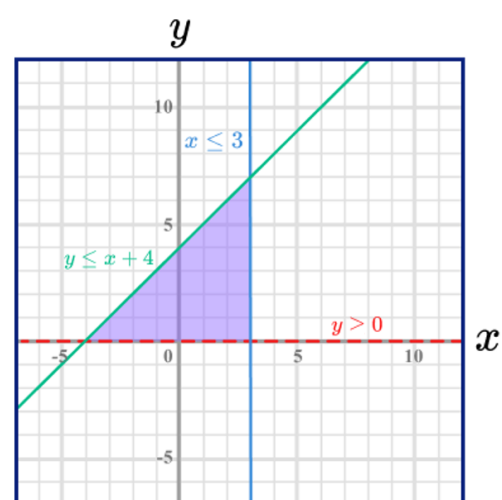
10) $x \geq -4$, $y < 7$, $y \geq 2x + 4$

10)



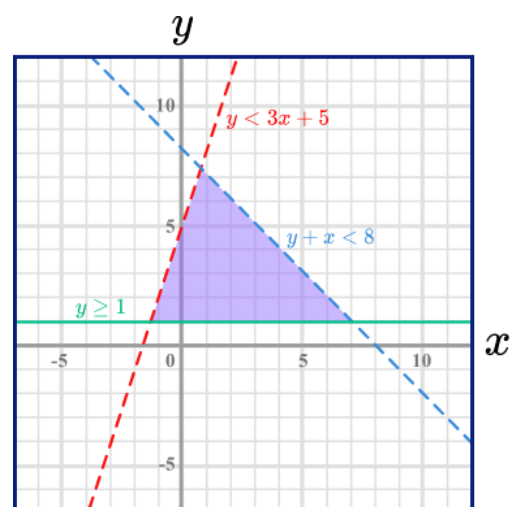
11) $x \leq 3$, $y > 0$, $y \leq x + 4$

11)

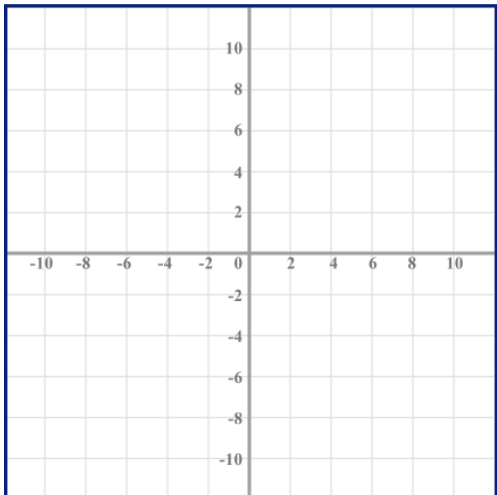
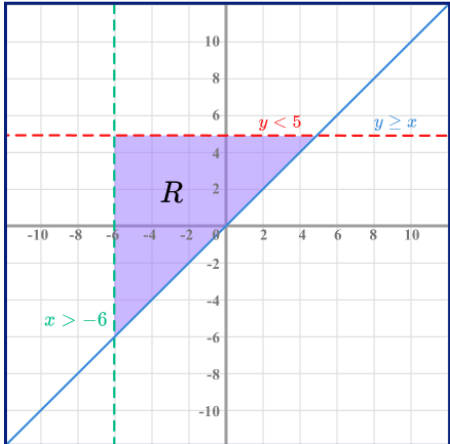


12) $y < 3x + 5$, $y + x < 8$, $y \geq 1$

12)



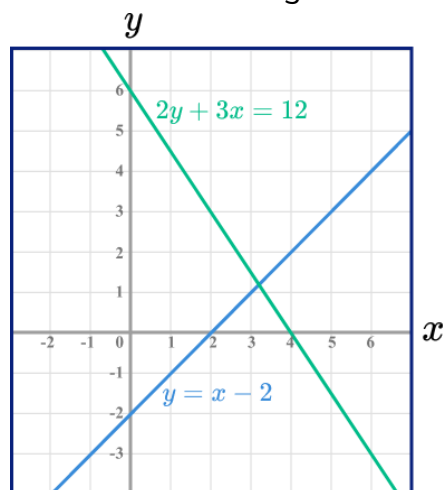
Graphing Inequalities - Answers

	Question	Answer
	Applied Questions	
1)	<p>a) On the grid below, draw straight lines, and use shading to show the region R that satisfies the inequalities</p> $x > -6, y \geq x \text{ and } y < 5$  <p>The point P with coordinates (x, y), lies inside the region R.</p> <p>x and y are integers.</p> <p>b) Write down the coordinates of all the possible points P of whose coordinates are both positive integers.</p>	<p>a)</p>  <p>b) $(0, 0), (0, 1), (0, 2), (0, 3), (0, 4)$ $(1, 1), (1, 2), (1, 3), (1, 4)$ $(2, 2), (2, 3), (2, 4)$ $(3, 3), (3, 4)$ $(4, 4)$</p>

Graphing Inequalities - Answers

2)

The graphs of the straight lines with equations $2y + 3x = 12$ and $y = x - 2$ have been drawn on the grid.



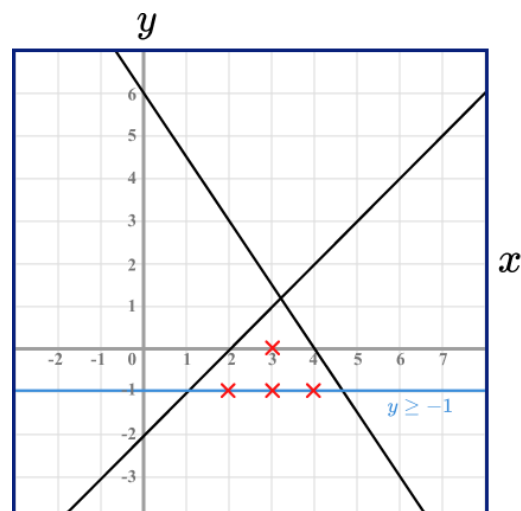
$$2y + 3x < 12$$

$$y < x - 2$$

$$y \geq -1$$

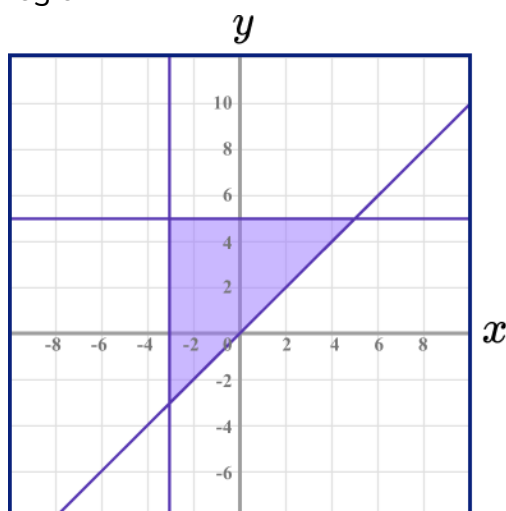
x and y are integers.

On the grid, mark with a cross (x), each of the four points which satisfies all three inequalities.



3)

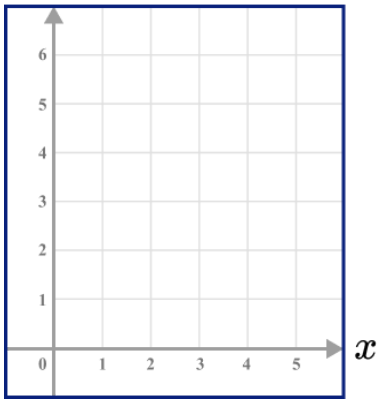
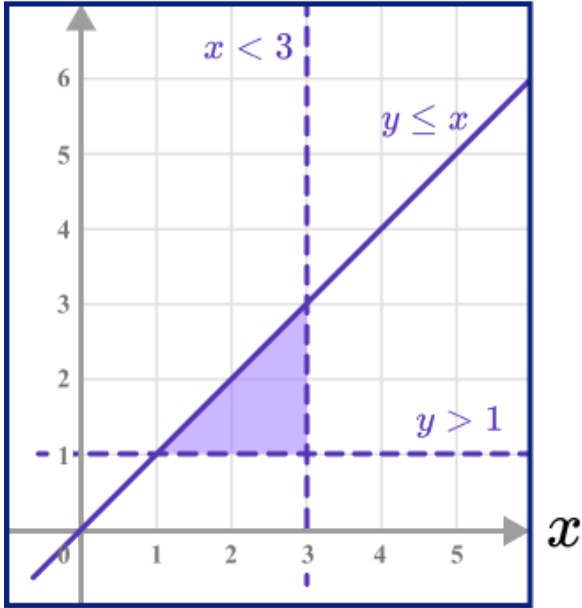
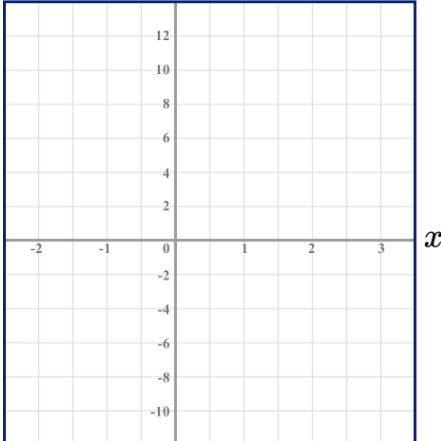
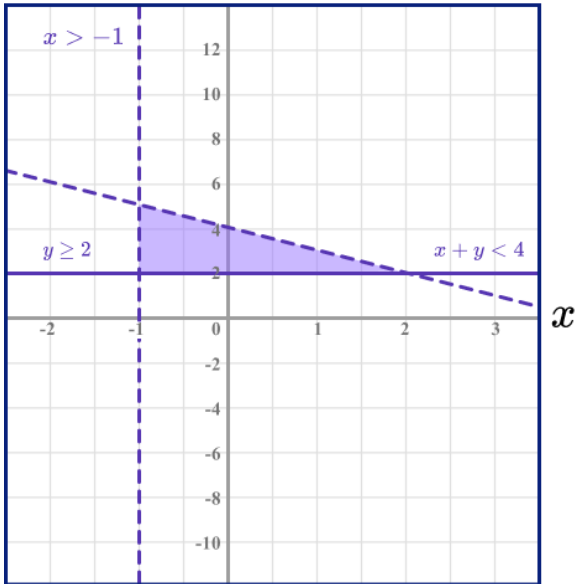
Below is a graph showing a shaded region A.



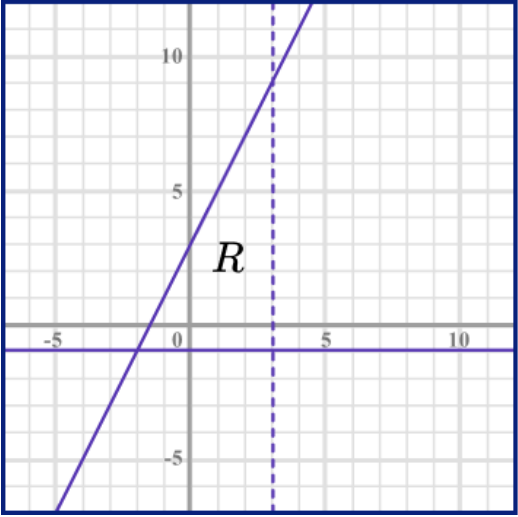
Find the three inequalities which satisfy the shaded region A.

$$x \geq -3, y \leq 5 \text{ and } y \geq x$$

Graphing Inequalities - Mark Scheme

	Question	Answer	
	Exam Questions		
1)	<p>On the grid, clearly indicate the region that satisfies all these inequalities.</p> $x < 3, y \leq x, y > 1$ 	<p>Drawing lines Two inequalities correctly represented Correct region shaded, labelled or identified clearly</p> 	<p>(1) (1) (1)</p>
2)	<p>On the grid, label the region that satisfies all three of these inequalities.</p> $x + y < 4, x > -1 \text{ and } y \geq 2$ 	<p>Drawing lines Two inequalities correctly represented Correct region shaded, labelled or identified clearly</p> 	<p>(1) (1) (1)</p>

Graphing Inequalities - Mark Scheme

3)	<p>The region labelled R satisfies three inequalities.</p>  <p>State the three inequalities.</p>	$y \geq -1$ $x < 3$ $y \leq 2x + 3$	<p>(1)</p> <p>(1)</p> <p>(1)</p>
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