Name: _____

ASM Tuition Academy

Inequalities Regions

Instructions:

- Use **black** ink or ball-point pen.
- Answer all questions.
- Answer the questions in the spaces provided
  - there may be more space than you need.
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- You must **show all you're working out.**

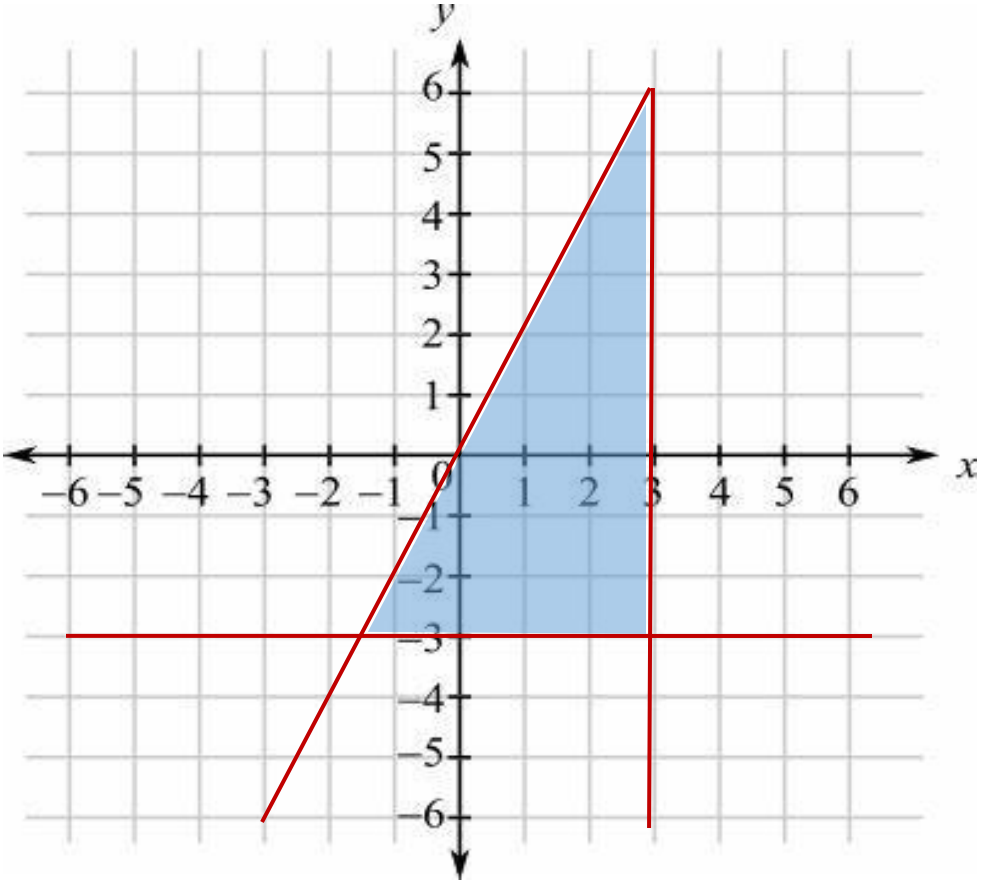
Information:

- The marks for each question are shown in brackets
  - use this as a guide as to how much time to spend on each question.

Advice:

- Read each question carefully before you start to answer it.
- Keep an eye on time.
- Try to answer every question.
- Check your answers if you have time at the end.

1. **Write down the three inequalities that define the shaded region.**



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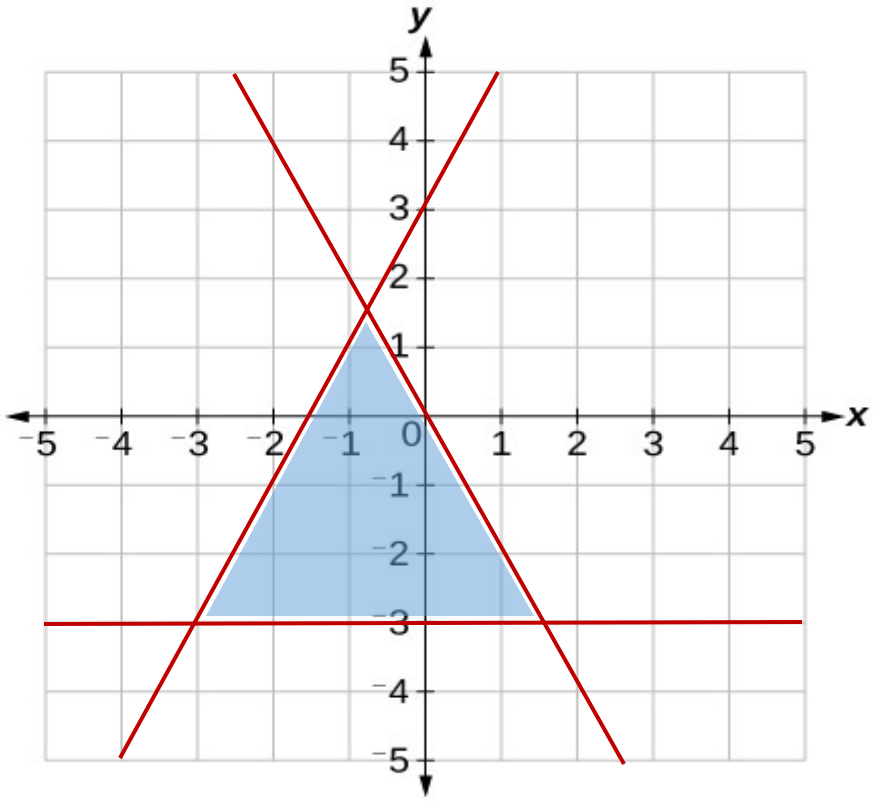
(Total for question 1 is 4 marks)

2. Write down the three inequalities that define the shaded region.



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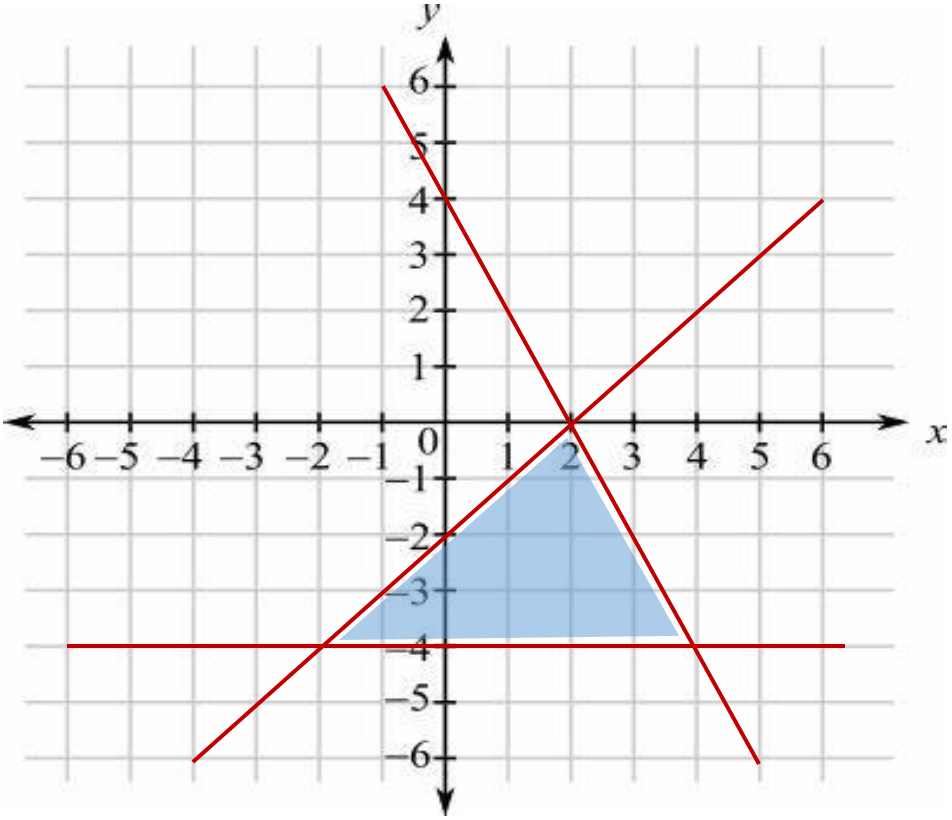
(Total for question 2 is 4 marks)

3. Write down the three inequalities that define the shaded region.



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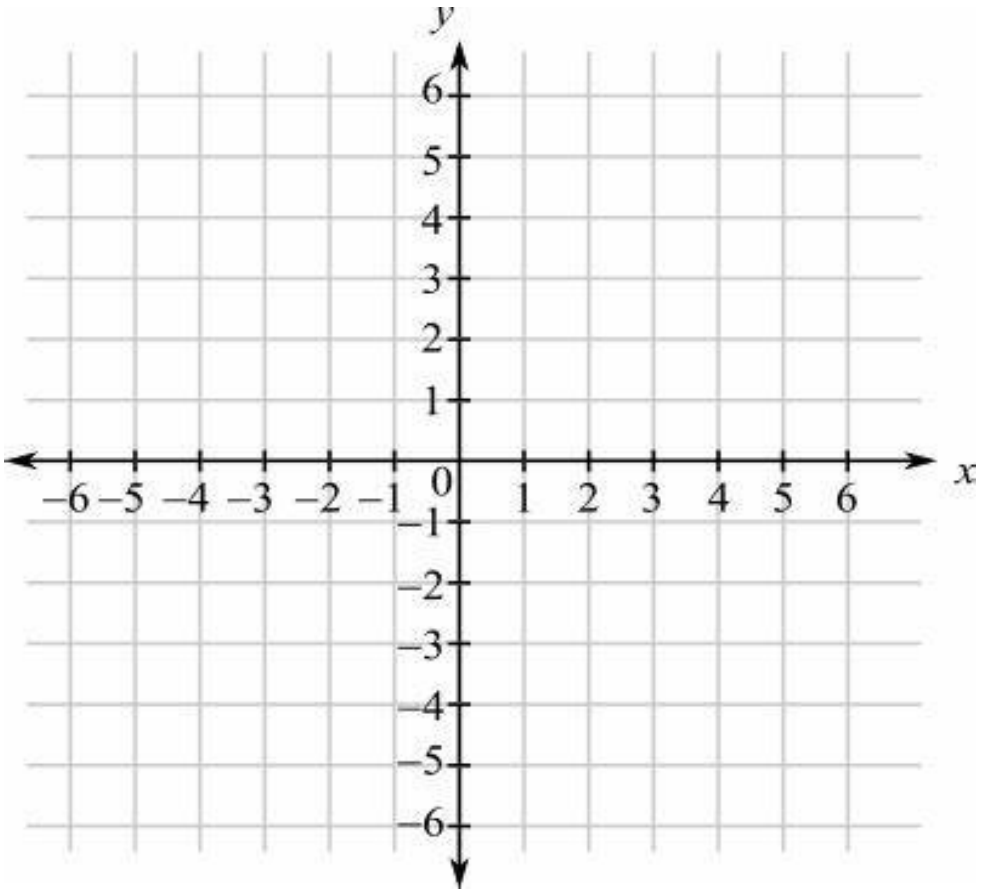
(Total for question 3 is 4 marks)

4. On the grid shade the region that satisfies all these inequalities.

$y < 4$ **$y \geq -x$** **$y \geq 3x - 2$**

Label the region R.

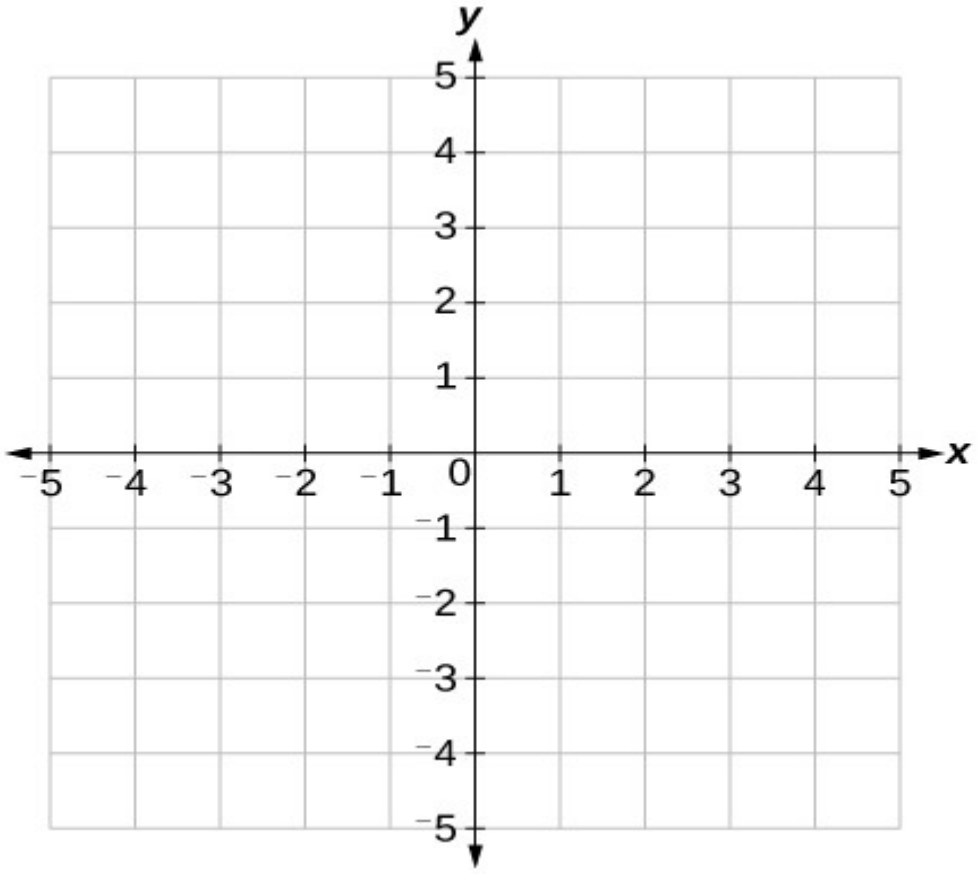


(Total for question 4 is 3 marks)

5. On the grid shade the region that satisfies all these inequalities.

$y \geq 1$ $y \leq 4 - x$ $y \leq 2x + 1$

Label the region R.

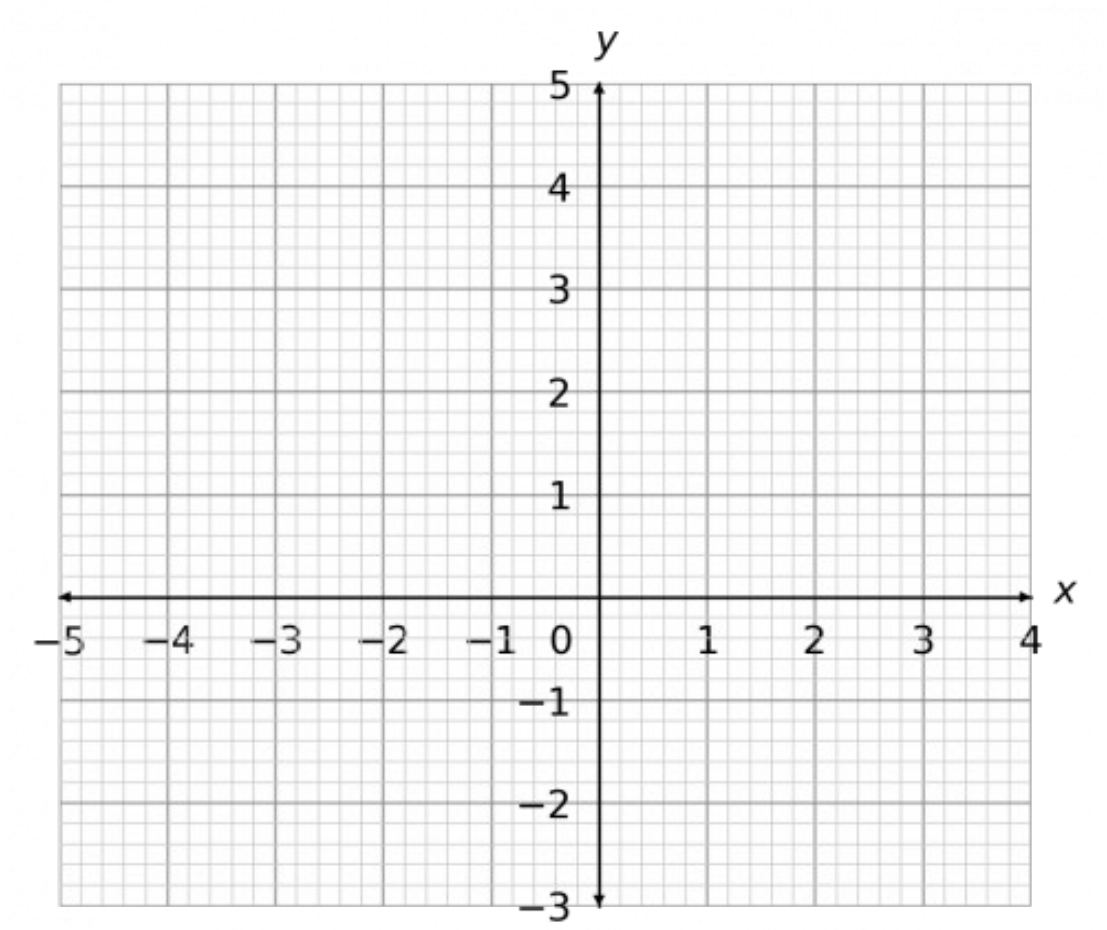


(Total for question 5 is 3 marks)

6. On the grid shade the region that satisfies all these inequalities.

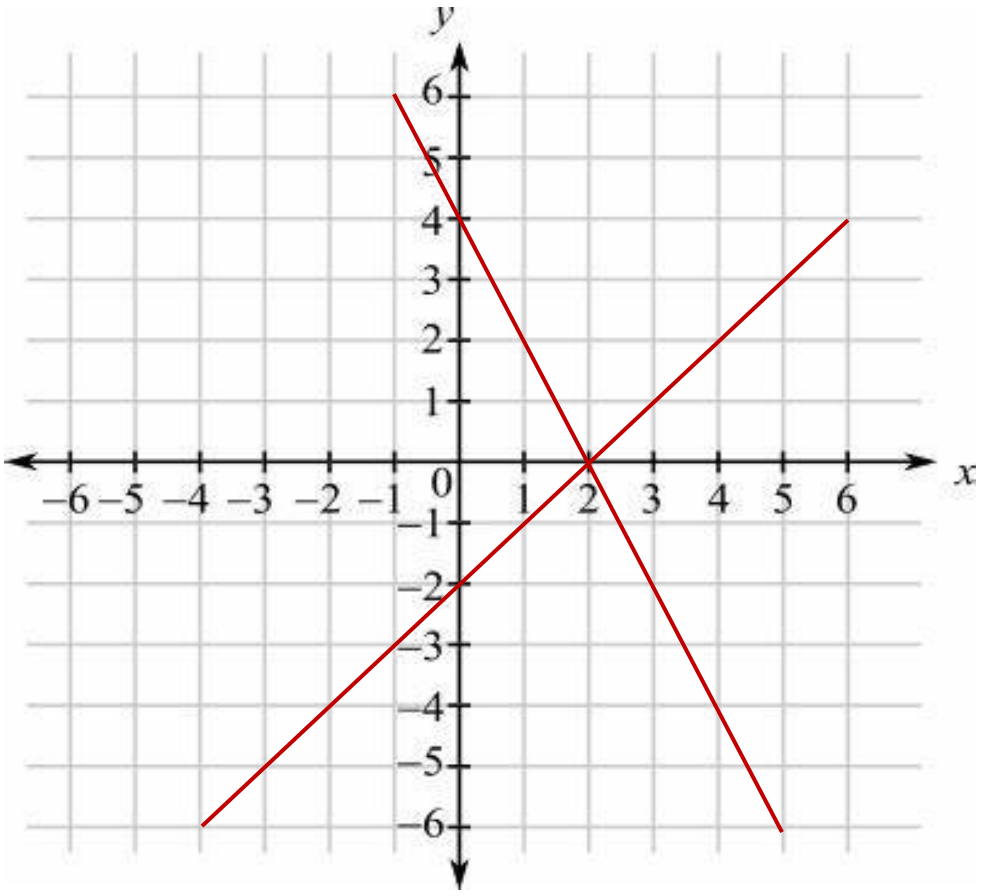
$x > 0$ $\qquad$ $y \leq \frac{1}{2}x$ $\qquad$ $x + 2y < 4$

Label the region R.



(Total for question 6 is 3 marks)

7. The graph of the straight line with equations $y \leq x - 2$ and $y \leq -2x + 4$ have been drawn on the grid.



x and y are both integers.
Shade the region where all of the points that satisfies all the inequalities.

$y \leq x - 2$ **$y \leq -2x + 4$** **$y \geq -4$**

(Total for question 7 is 2 marks)