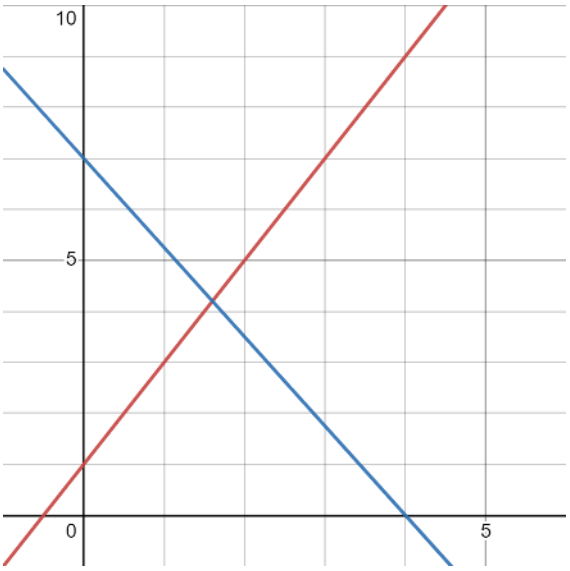
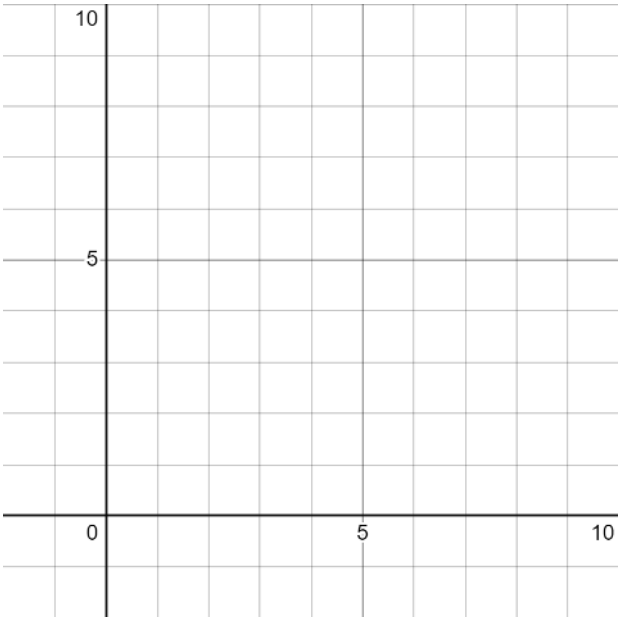
QT - Inequalities on Graphs

1. The diagram shows the lines y = 2x + 1 and 7x + 4y = 28. The region R satisfies these inequalities. $y \leq 2x+1$ $7x+4y \geq 28$ $y > 1$
By drawing a third straight line, find and label the region R that satisfies these inequalities.
(4 marks)



2. Region R satisfies these inequalities: $y > 3$ $y \geq x$ $x + y \leq 9$
By drawing three straight lines on the grid, find and label the region R. (4 marks)



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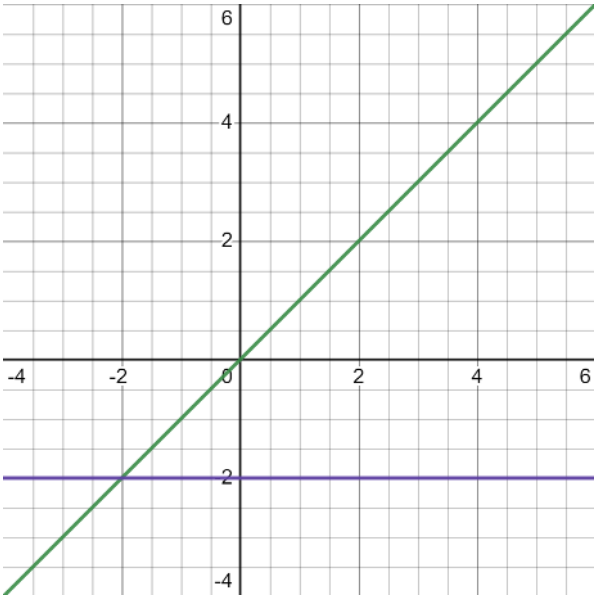
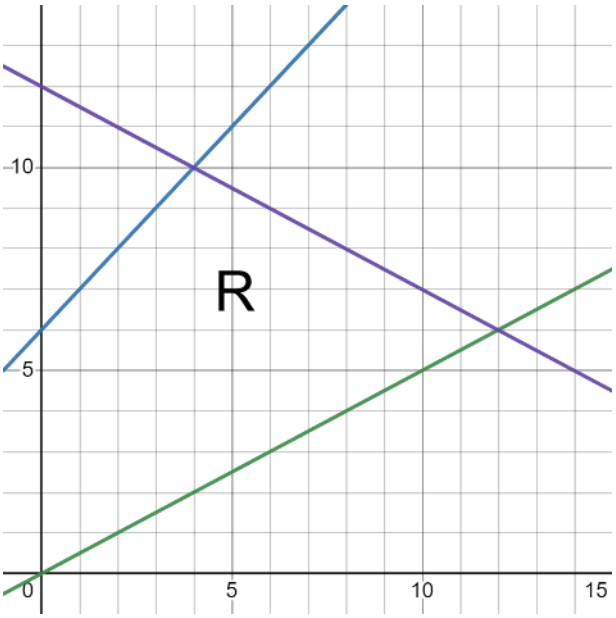
3. The graphs of y = x and y = -2 are drawn on the grid. The region R satisfies the following inequalities: $y \geq -2$ $y \leq x$ $y < 4 - 2x$
By drawing one more line, find and label the region R.



4. The region R is shown on this grid.
Region R is defined by four inequalities.
One of the inequalities is $x \geq 0$.
Use the symbols ≤ and ≥ to complete the other three inequalities:

y _____ ½ x x + 2y _____ 24 y _____ x + 6



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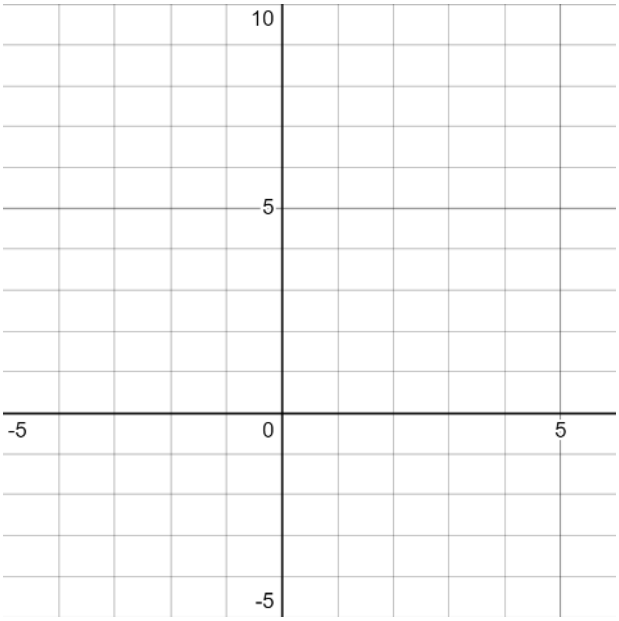
5. On the grid shade the region that satisfies all these inequalities.

$x + y < 4$ $y > x - 1$ $y < 3x$

Label the region R



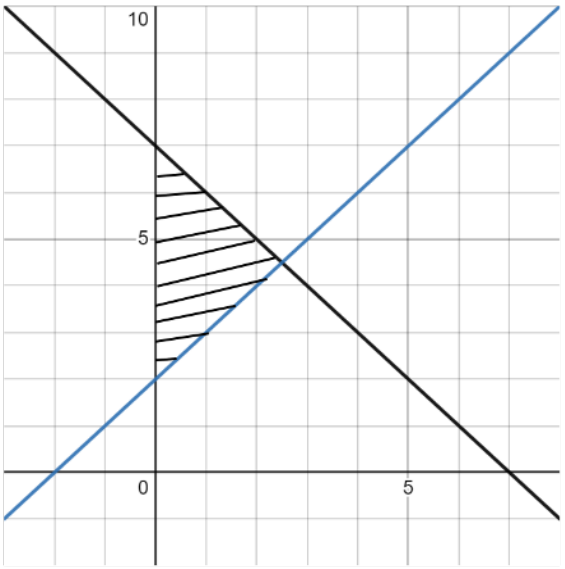
6. For her maths homework, Helen answered the following question.

Shade the region that is defined by all these inequalities.

$x + y \leq 6$ $y \geq 0$ $y \leq x + 2$

Here is Helen's answer. Helen made some mistakes when she answered the question.

Write down two mistakes Helen made.



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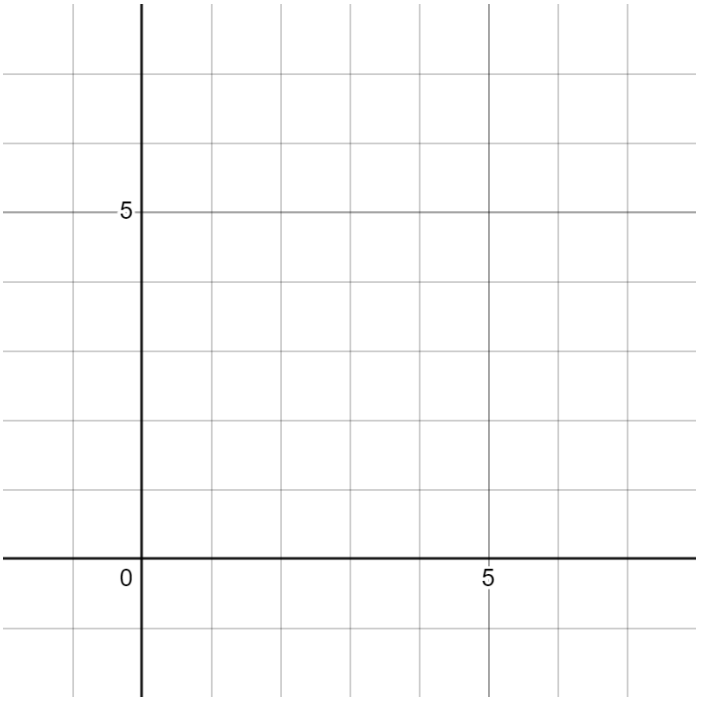
7. On the grid show, by shading, the region defined by the inequalities:

$x < 4$ $2x + y > 6$ $y > \frac{1}{3}x$

Label the region R



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