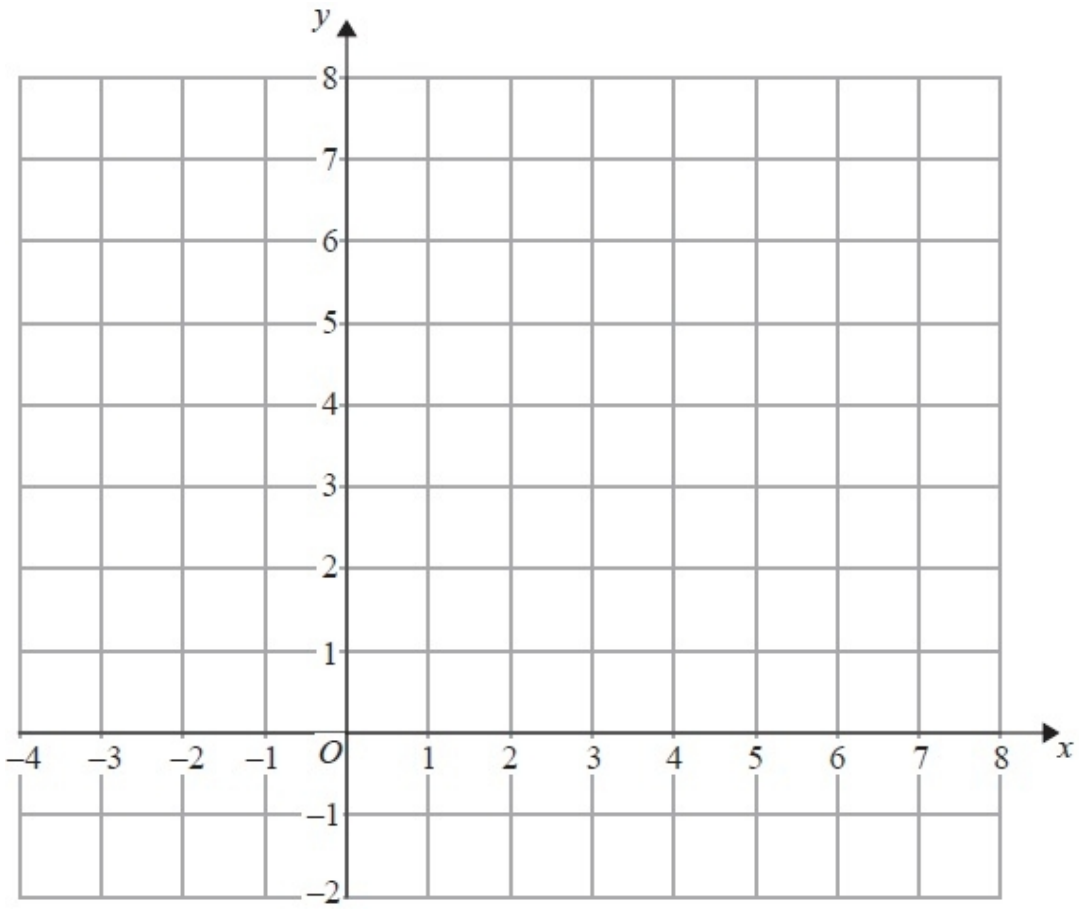
A286 Inequality regions

Q1.

On the grid below, show by shading, the region defined by the inequalities

$x + y < 6$ $x > -1$ $y > 2$

Mark this region with the letter R.



(Total for Question is 4 marks)

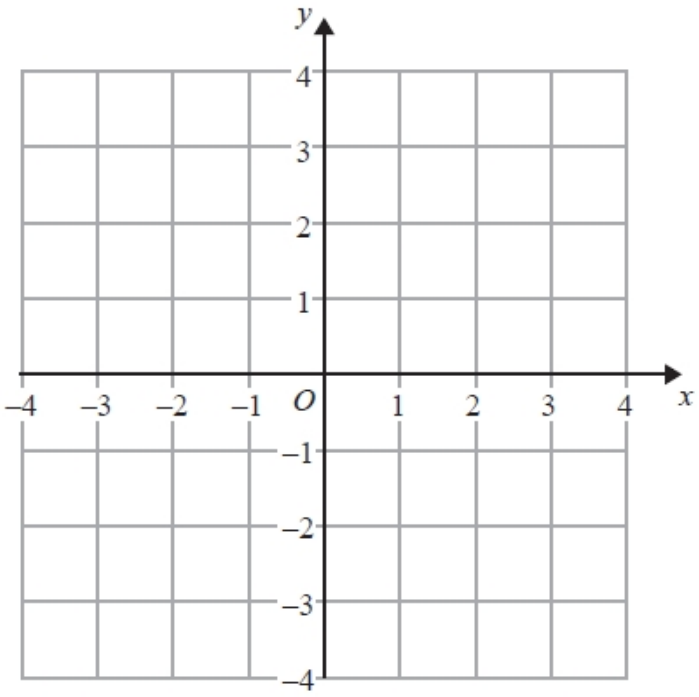
Q2.

(a) Solve the inequality $5e + 3 > e + 12$

.....

(2)

(b) On the grid, shade the region defined by the inequality $x + y > 1$



(2)

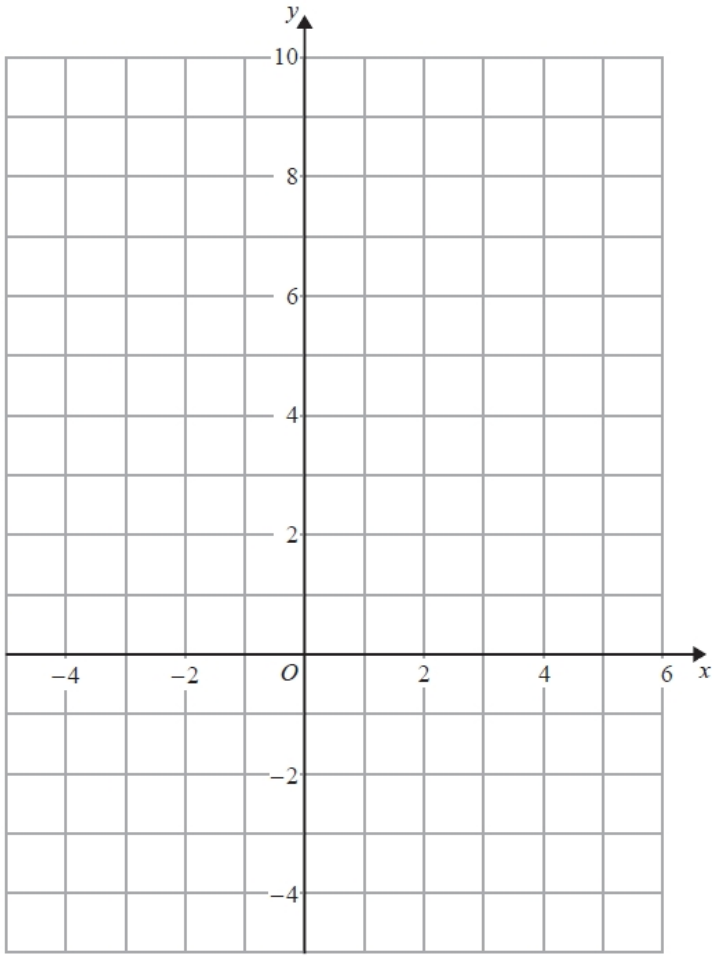
(Total for Question is 4 marks)

Q3.

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

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

Label the region **R**.



(Total for question is 4 marks)

Q4.

(a) Given that x and y are integers such that

$$3 < x < 7$$
$$4 < y < 9$$
$$\text{and } x + y = 13$$

find all the possible values of x.

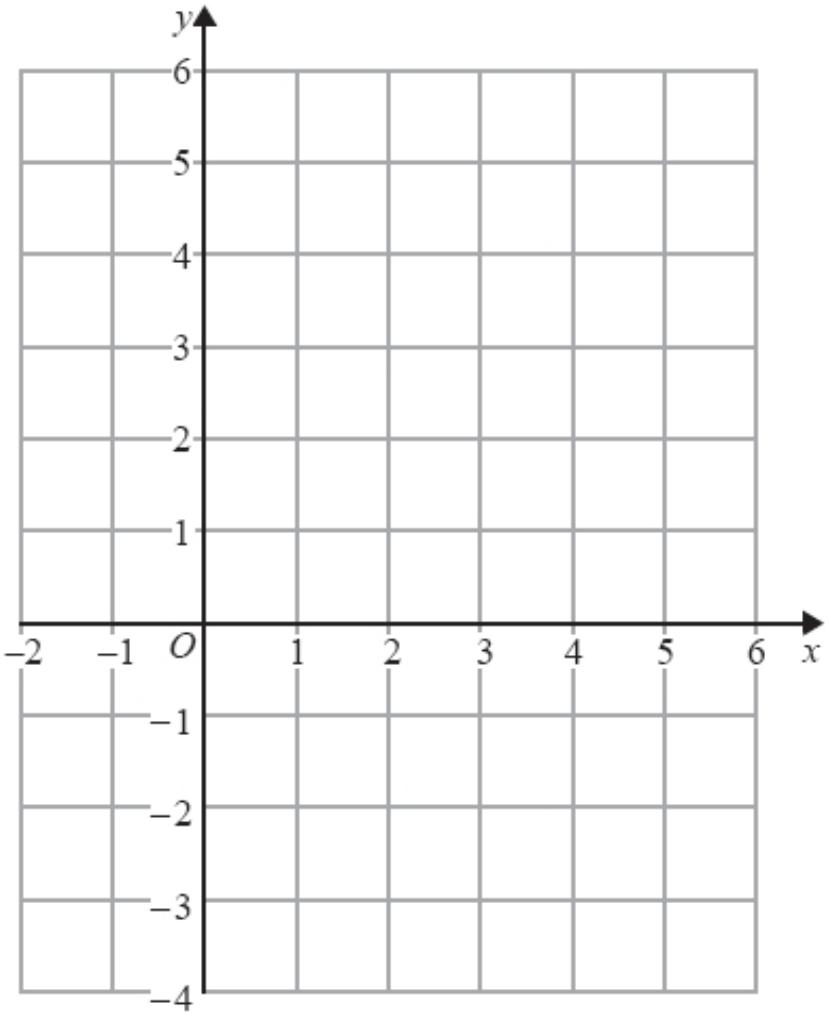
.....

(2)

(b) On the grid below show, by shading, the region defined by the inequalities

$y \geqslant -1$ $y \leqslant 4 - x$ $y \leqslant 3x - 1$

Mark this region with the letter R.



(4)

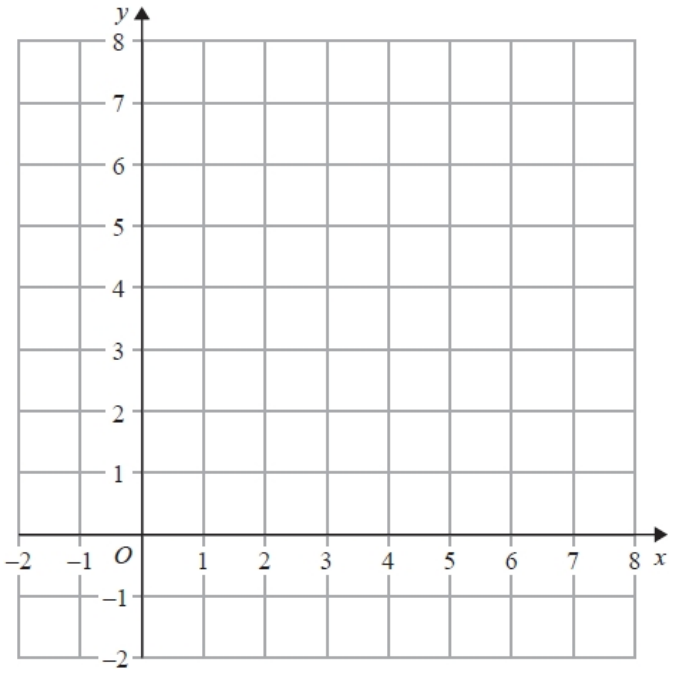
(Total for question = 6 marks)

Q5.

On the grid show, by shading, the region defined by the inequalities

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

Label the region **R**.



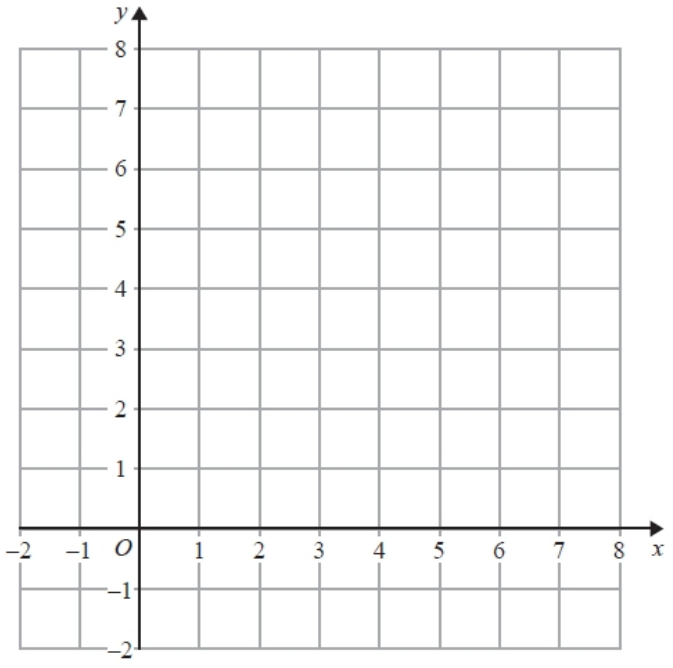
(Total for question = 3 marks)

Q6.

On the grid show, by shading, the region that satisfies all three of the inequalities

$x + y < 7$ $y < 2x$ $y > 3$

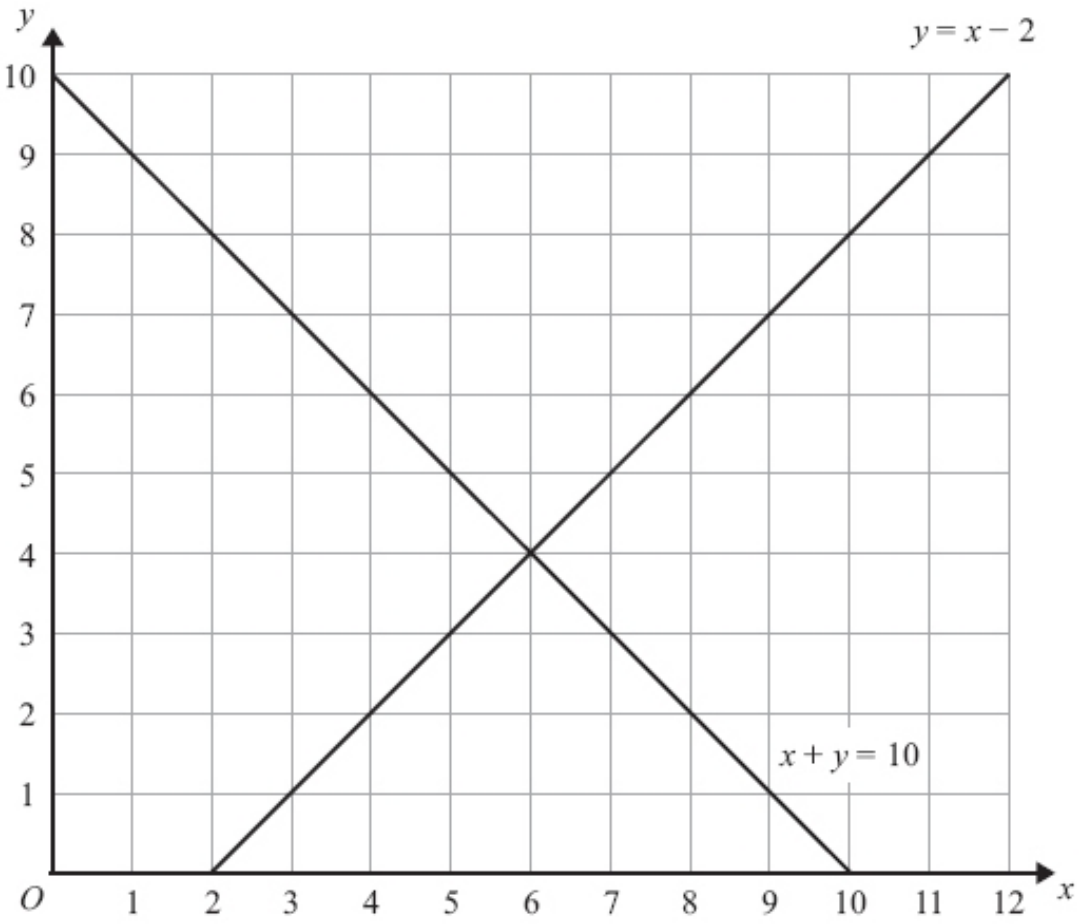
Label the region **R**.



(Total for question = 4 marks)

Q7.

The lines $y = x - 2$ and $x + y = 10$ are drawn on the grid.

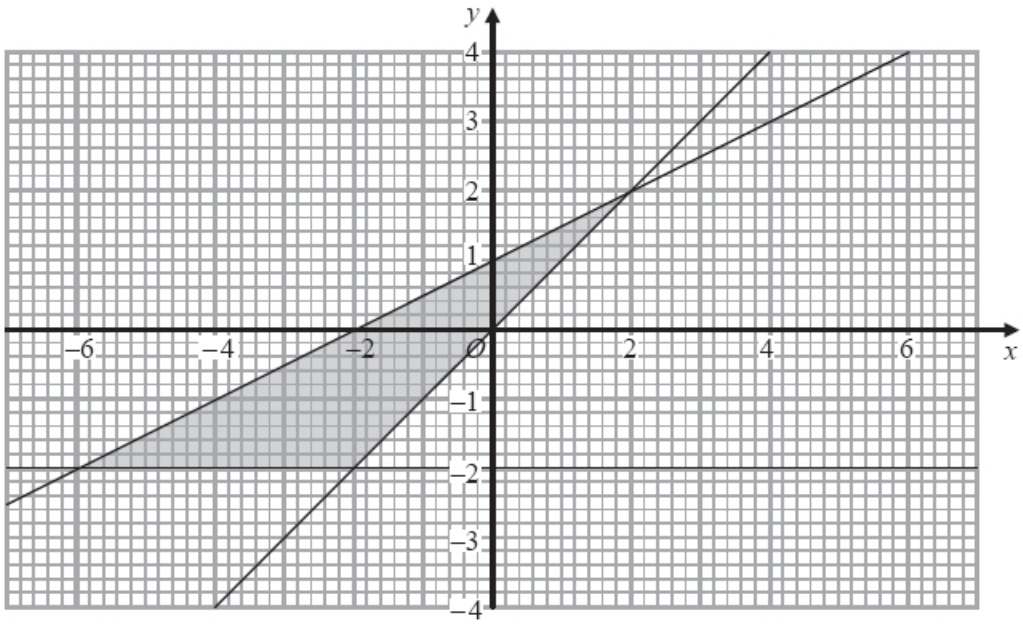


On the grid, mark with a cross (**×**) each of the points with integer coordinates that are in the region defined by

$y > x - 2$
$x + y < 10$
$x > 3$

(Total for Question is 3 marks)

Q8.



Write down the three inequalities that define the shaded region.

.....

.....

.....

(Total for question = 4 marks)

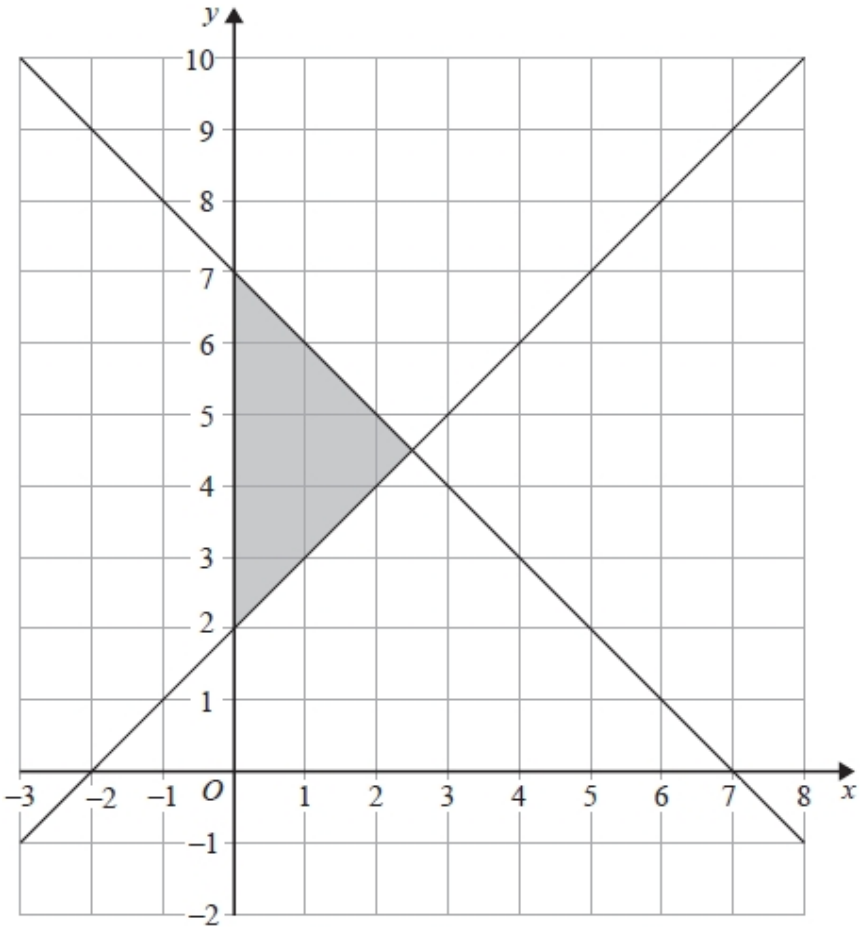
Q9.

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.

1 .....

2 .....

(Total for question = 2 marks)