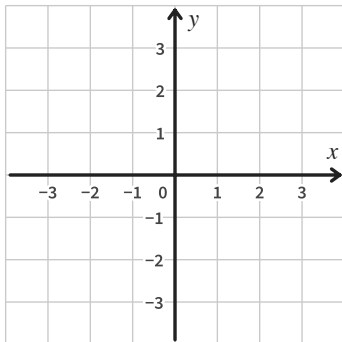


Inequalities and regions

1

Show $x \leq 2$ on the grid.



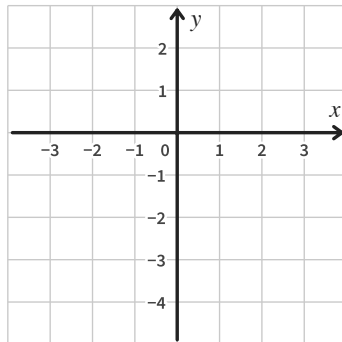
1 Dashed or solid? **Solid**

3 Test a point: **(0, 0): $0 \leq 2$. True.**

4 Side:

2

Show $y > -3$ on the grid.



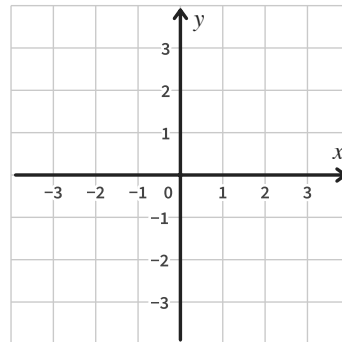
1 Dashed or solid? **Dashed**

3 Test a point:

4 Side:

3

Show $y \leq 2x + 2$ on the grid.



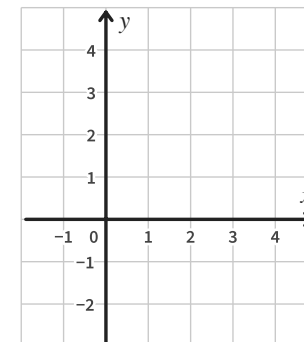
1 Dashed or solid?

3 Test a point:

4 Side:

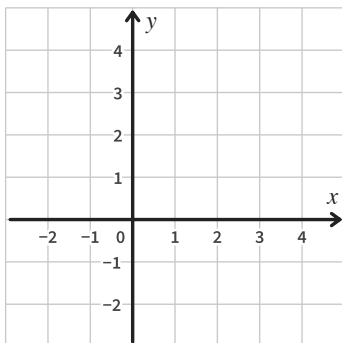
4

Show $2x + 3y > 6$ on the grid.



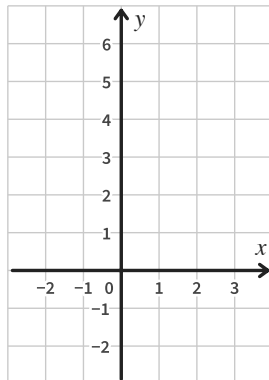
5

Shade the region R where $x + y \geq 2$, $y < 3$ and $x \leq 3$.



6

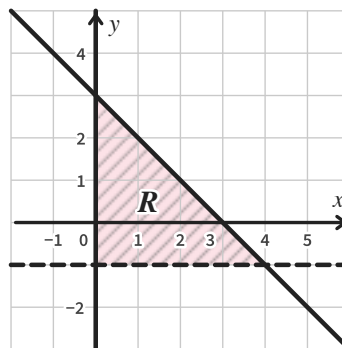
R is the region where $x > -1$, $y > -1$ and $2x + y \leq 4$. How many points with integer coordinates are in R?



Answer

7

Write down the three inequalities that describe R.



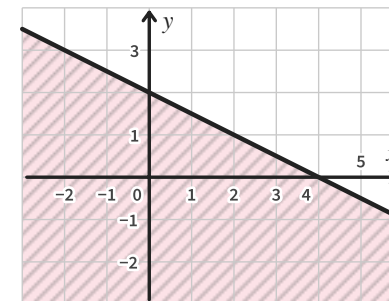
$x = 0$:

$y = -1$:

$x + y = 3$:

8

Kai shows $x + 2y > 4$ with a solid line and shades the side with (0, 0). Explain his two mistakes.



1:

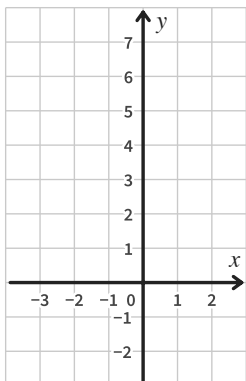
2:

Inequalities and regions *further practice*

9



Shade the region R where $y > -2$, $x \leq 1$ and $y \leq 3x + 4$.



Answer _____

10



Is the point $(2, -1)$ in the region where $y > x - 4$ and $2x + y \leq 3$? Show how you know.

Answer _____

11



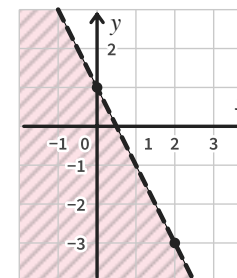
A garden centre packs x large pots and y small pots in a box, where $x \geq 1$, $y \geq 2$ and $3x + y \leq 9$. x and y are integers. How many different boxes can it pack?

Answer _____

12



The dashed line goes through $(0, 1)$ and $(2, -3)$. The region below it is shaded. Write down the inequality.

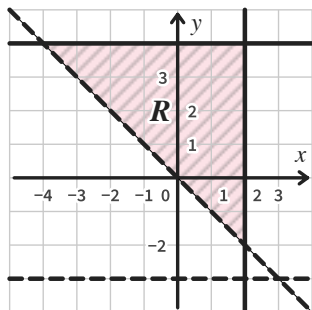


Answer _____

13



Write down the three inequalities that describe R.



Answer _____

14



R is the region where $y \geq -2$, $y < x$ and $x + y < 3$. Which of these points are in R: $(0, -1)$, $(2, 0)$, $(3, 0)$, $(1, 1)$?

Answer _____

15



R is the triangle with corners $(0, 0)$, $(4, 0)$ and $(0, 4)$. Its edges on the axes are solid and its third edge is dashed. Write down the three inequalities.

Answer _____

16



Lena says the point $(3, 2)$ is in the region $y \geq 2x - 4$ because it is above the line. Is she right? Explain.

Answer _____