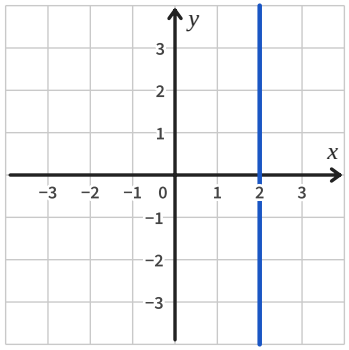
Inequalities and regions: the boundary line

ANSWERS

1

Draw the boundary line of $x \leq 2$.

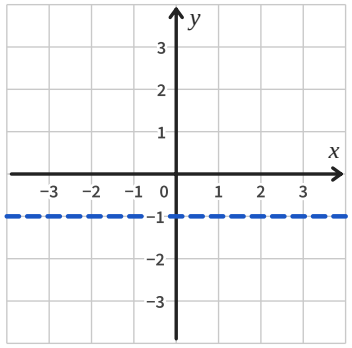


Solid

a vertical line through (2, 0)

2

Draw the boundary line of $y > -1$.

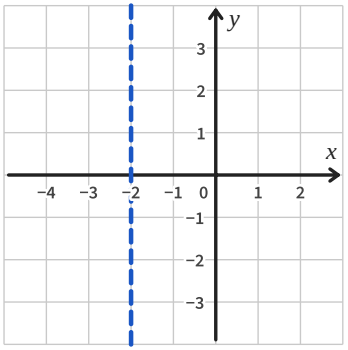


Dashed

a horizontal line through (0, −1)

3

Draw the boundary line of $x < -2$.

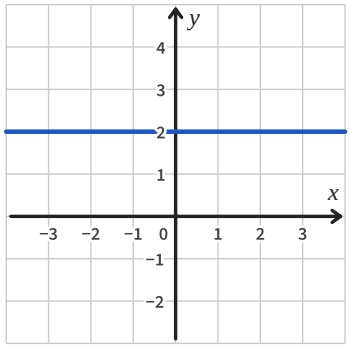


Dashed

a vertical line through (−2, 0)

4

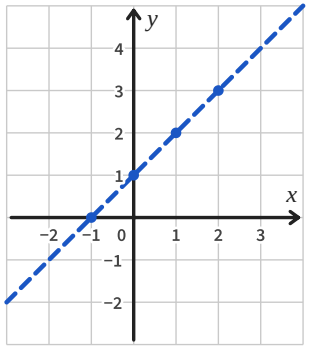
Draw the boundary line of $y \geq 2$.



5

Draw the boundary line of $y < x + 1$.

x	y
−1	0
0	1
1	2
2	3

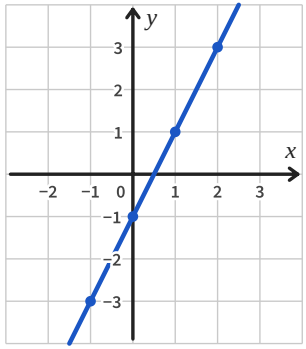


Dashed

6

Draw the boundary line of $y \geq 2x - 1$.

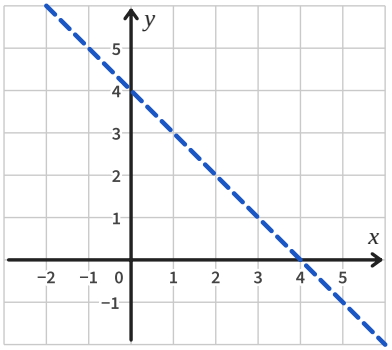
x	y
−1	−3
0	−1
1	1
2	3



Solid

7

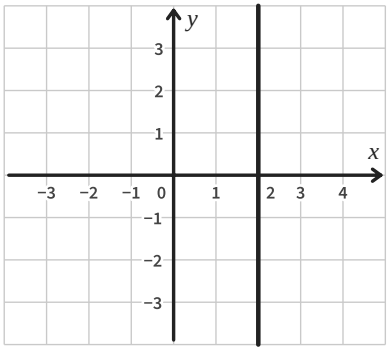
Draw the boundary line of $y > 4 - x$.



dashed, through (0, 4) and (4, 0)

8

Ali draws the boundary line of $y < 2$ like this. Explain his two mistakes.



1: it should be dashed for <

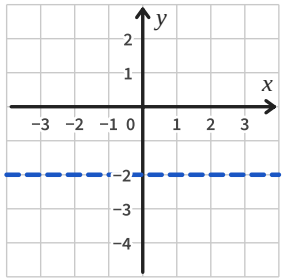
2: y = 2 is horizontal, through (0, 2)

Inequalities and regions: the boundary line *further practice*

ANSWERS

9

Draw the boundary line of $y < -2$.

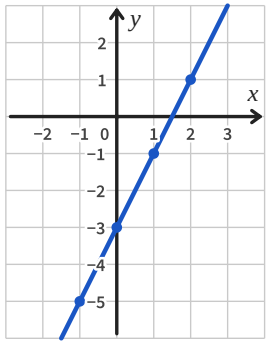


through (0, −2)

Answer dashed, horizontal

10

Draw the boundary line of $y \geq 2x - 3$.

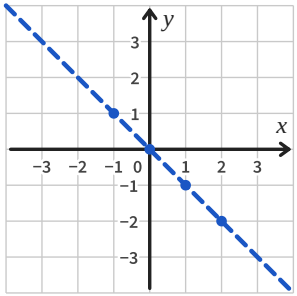


x: −1, 0, 1, 2; y: −5, −3, −1, 1

Answer solid

11

Draw the boundary line of $y < -x$.



x: −1, 0, 1, 2; y: 1, 0, −1, −2

Answer dashed, through (0, 0)

12

Which of these have a dashed boundary line? $x < 4$, $y \geq 1$, $y > 2x$, $x \leq -3$

< and > do not include the line

≤ and ≥ do: solid

Answer x < 4 and y > 2x

13

The boundary line of an inequality is the dashed line $x = 4$. Write down an inequality it could be.

dashed: < or >

x = 4: the letter is x

Answer x < 4 or x > 4

14

Is the point (2, 2) on the boundary line of $y \geq 3x - 4$? Show how you know.

3 × 2 − 4 = 2

so y = 2 when x = 2

Answer Yes

15

Sam says the boundary line of $y \leq 3$ is a vertical line through (3, 0).
Explain his mistake.

every point on it has y = 3

(0, 3), (1, 3), (2, 3) ...

Answer horizontal, through (0, 3)

16

A solid boundary line goes through (0, 2), (1, 5) and (2, 8). Write down the equation of the line.

y goes up 3 each time x goes up 1

y = 2 when x = 0

Answer y = 3x + 2