GRAPHS: DRAWING LINES & SHADING INEQUALITIES

Best Guess Mastery Worksheet (Target Grade 4/5)

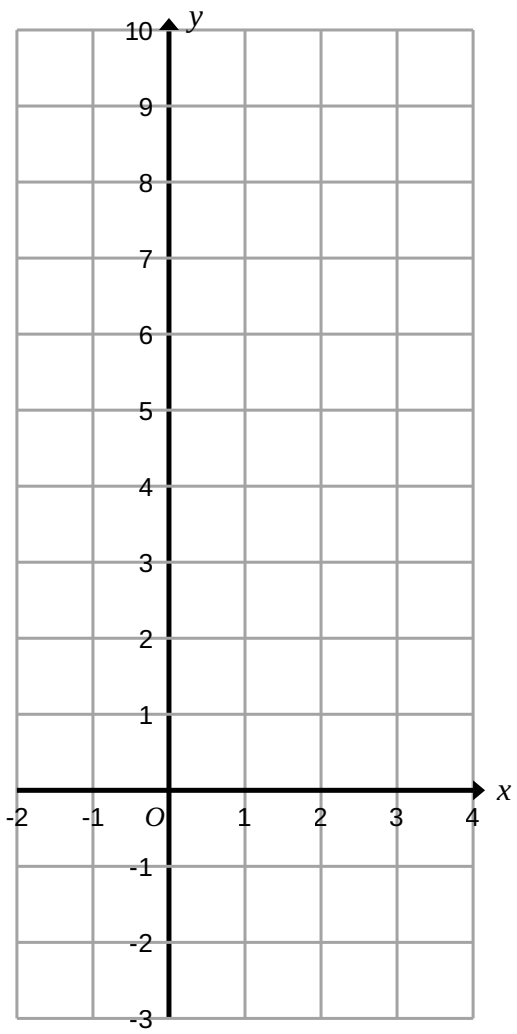
I Do

(a) On the grid, draw the graph of $y = -2x + 4$ for values of x from -2 to 3.

(b) Show, by shading on the grid, the region that satisfies **all three** of the inequalities:

$x \geq 0$ $y \geq -1$ $y \leq -2x + 4$

Label the region **R**.



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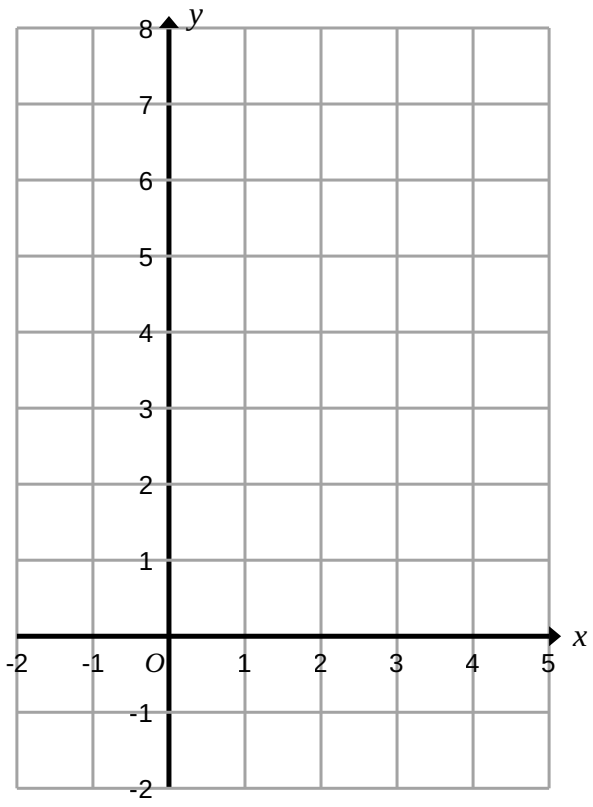
We Do

(a) On the grid, draw the graph of $y = -x + 3$ for values of x from -2 to 4.

(b) Show, by shading on the grid, the region that satisfies **all three** of the inequalities:

$x \geq -1$ $y \geq 1$ $y \leq -x + 3$

Label the region **R**.



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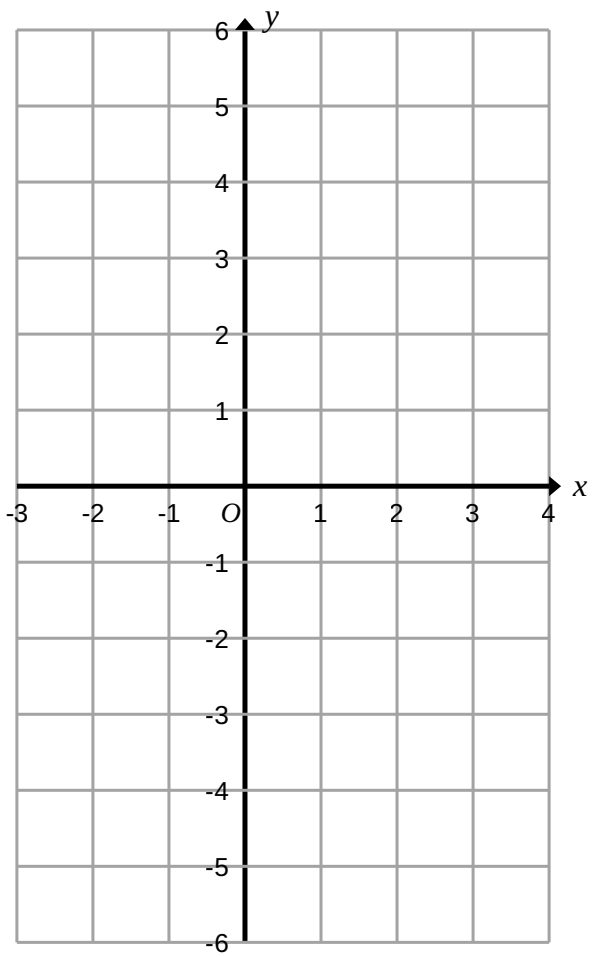
You Do 1

(a) On the grid, draw the graph of $y = 2x - 1$ for values of x from -2 to 3.

(b) Show, by shading on the grid, the region that satisfies **all three** of the inequalities:

$x \leq 2$ $y \geq -3$ $y \geq 2x - 1$

Label the region **R**.



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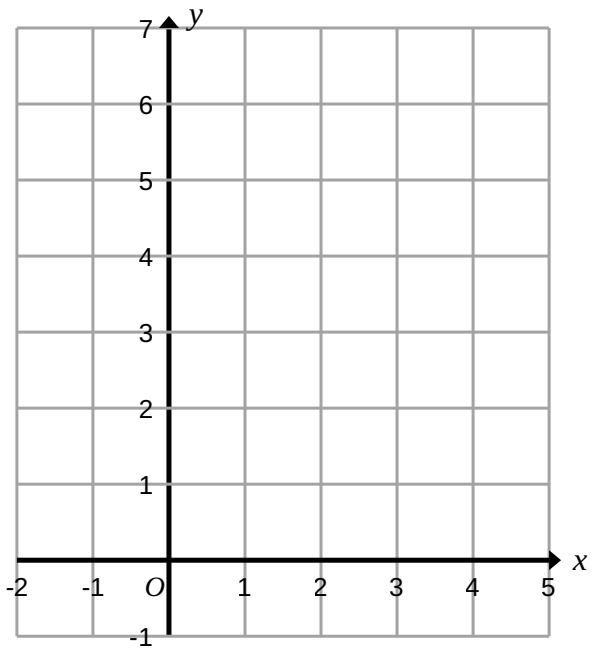
You Do 2

(a) On the grid, draw the graph of $y = \frac{1}{2}x + 2$ for values of x from -2 to 4.

(b) Show, by shading on the grid, the region that satisfies **all three** of the inequalities:

$x \geq 0$ $y \leq 4$ $y \geq \frac{1}{2}x + 2$

Label the region **R**.



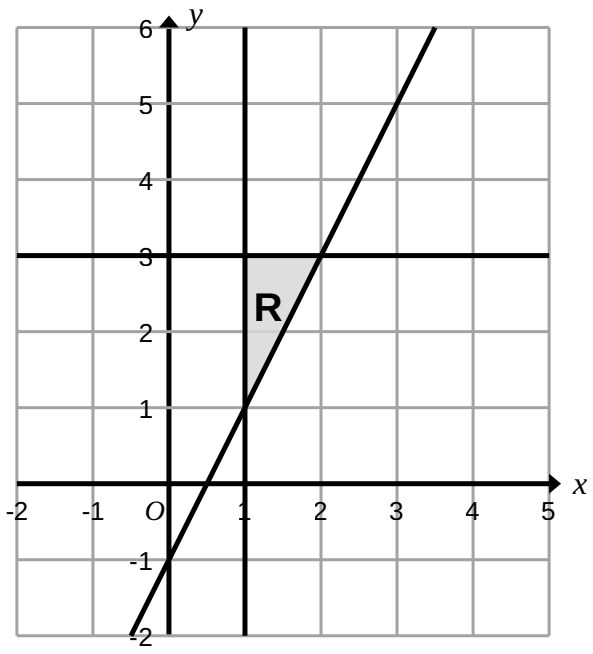
GRAPHS: IDENTIFYING REGIONS

Best Guess Mastery Worksheet (Target Grade 4/5)

Challenge 1

The region **R**, shown shaded in the diagram, is defined by three inequalities.

Write down the three inequalities that define region **R**.



1. .....
2. .....
3.

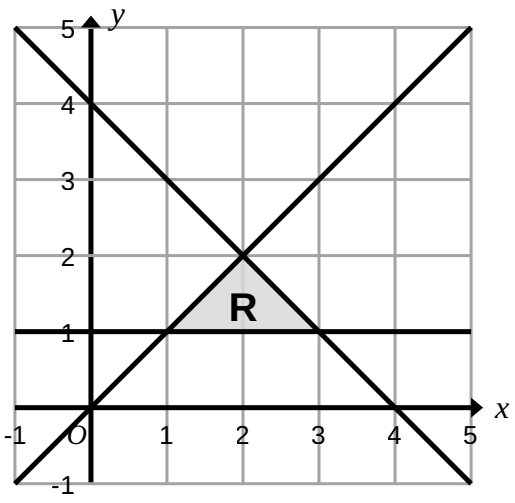
GRAPHS: IDENTIFYING REGIONS

Best Guess Mastery Worksheet (Target Grade 4/5)

Challenge 2

The region **R**, shown shaded in the diagram, is defined by three inequalities.

Write down the three inequalities that define region **R**.



1. .....
2. .....
3. .....

Answers & Worked Solutions

I Do:

(a) Plot the line passing through points like (−2, 8), (0, 4), and (3, −2). Connect with a straight line.
(b) Draw $x = 0$ (the y-axis) and $y = -1$ (horizontal line at −1). Shade the triangle bounded by the y-axis, $y = -1$, and the sloped line. The vertices of the shaded region R are **(0, −1), (2.5, −1), and (0, 4)**.

We Do:

(a) Plot the line passing through points like (−2, 5), (0, 3), and (4, −1). Connect with a straight line.
(b) Draw $x = -1$ (vertical line) and $y = 1$ (horizontal line). Shade the triangle bounded by these lines and the sloped line. The vertices of the shaded region R are **(−1, 1), (2, 1), and (−1, 4)**.

You Do 1:

(a) Plot the line passing through points like (−2, −5), (0, −1), and (3, 5). Connect with a straight line.
(b) Draw $x = 2$ and $y = -3$. Shade the triangle bounded by these lines and the sloped line. The vertices of the shaded region R are **(−1, −3), (2, −3), and (2, 3)**.

You Do 2:

(a) Plot the line passing through points like (−2, 1), (0, 2), and (4, 4). Connect with a straight line.
(b) Draw $x = 0$ (y-axis) and $y = 4$. Shade the triangle bounded by these lines. The vertices of the shaded region R are **(0, 2), (4, 4), and (0, 4)**.

Challenge 1:

The region is bounded by a vertical line, a horizontal line, and a sloped line.
1. Vertical line is $x = 1$. The region is to the right, so $\boldsymbol{x \geq 1}$.
2. Horizontal line is $y = 3$. The region is below, so $\boldsymbol{y \leq 3}$.
3. Sloped line passes through (0, −1) and (1, 1). Gradient = 2, y-intercept = −1. Line is $y = 2x - 1$. The region is above it, so $\boldsymbol{y \geq 2x - 1}$.

Challenge 2:

The region is bounded by a horizontal line and two sloped lines.
1. Horizontal line is $y = 1$. The region is above, so $\boldsymbol{y \geq 1}$.
2. First sloped line passes through (0, 0) and (2, 2). Line is $y = x$. The region is below it, so $\boldsymbol{y \leq x}$.
3. Second sloped line passes through (0, 4) and (4, 0). Line is $y = -x + 4$. The region is below it, so $\boldsymbol{y \leq -x + 4}$ (or $x + y \leq 4$).