Inequalities and regions: shading a region

Exit ticket ANSWERS Name _____

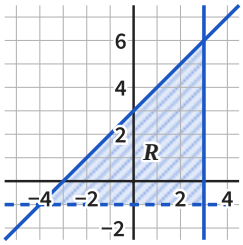
1. Is the line for $2x - y \geq 4$ dashed or solid? Is (0, 0) in the region?

Solid; no: 0 ≥ 4 is false

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

Yes: 3 > 2, and 4 ≤ 4 (on the solid line)

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



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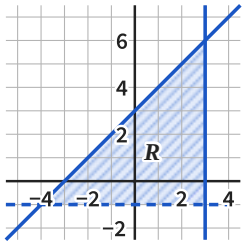

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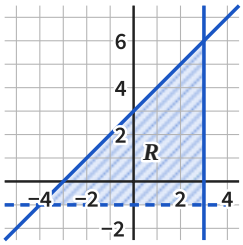

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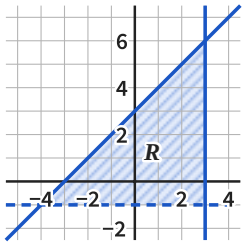

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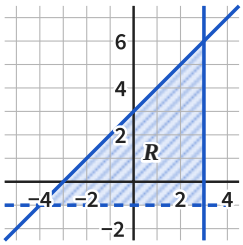

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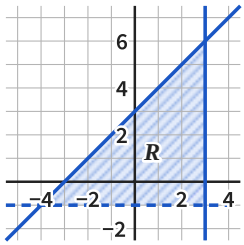


Exit ticket Inequalities and regions: shading a region

NEXT LESSON

1 **Is the line for $2x - y \geq 4$ dashed or solid? Is (0, 0) in the region?**

Solid; no: 0 ≥ 4 is false

TESTS Solid or dashed, then the side by a test point

LOOK FOR *dashed* ≥ includes the line, so it is solid

yes, (0, 0) is in it $2(0) - 0 = 0$, and $0 \geq 4$ is false

FIX IT

Is the line for $3x + y < 6$ solid or dashed? Is (0, 0) in the region? *Dashed; yes: 0 < 6 is true*

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

Yes: 3 > 2, and 4 ≤ 4 (on the solid line)

TESTS Testing a point in two inequalities

LOOK FOR *no: 4 is not less than 4* ≤ includes 4, so (1, 3) is on the solid line and in R

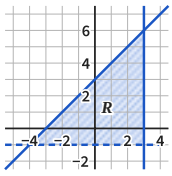
no: 1 > 6 is false x and y swapped: y is 3 and x is 1

FIX IT

Is the point (2, 3) in the region where $y \geq x + 1$ and $x + y < 5$? Show how you know. *No: 3 ≥ 3 is true, but 5 < 5 is false*

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

corners (−4, −1), (3, −1), (3, 6)



TESTS Shading three inequalities at once

LOOK FOR *y = −1 solid or x = 3 dashed* solid and dashed swapped

shaded above y = x + 3 the wrong side: (0, 0) gives 0 ≤ 3, true, so R is below

FIX IT

Is the line for $y \geq 3 - 2x$ solid or dashed? Is (0, 0) in the region? *Solid; no: 0 ≥ 3 is false*