

**Content and Language Objective: Students will learn the rules for graphing inequalities and discover the solutions for inequalities**

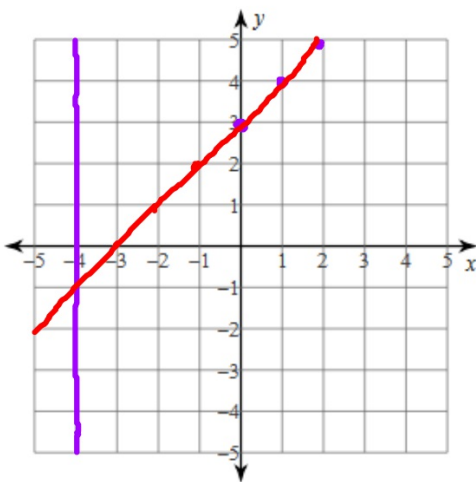
## Lesson 26: Graphing Inequalities

### Warm-Up

Solve each system by graphing.

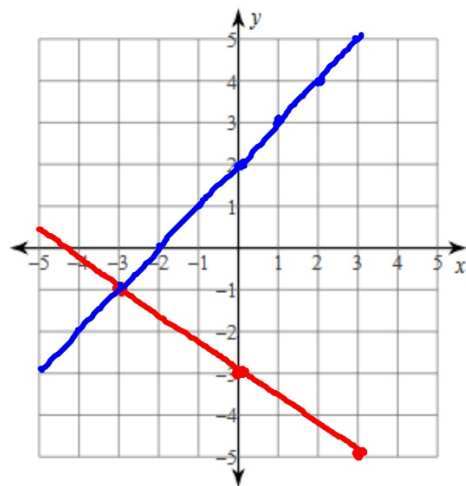
1)  $x = -4$   
 $y = x + 3$

$(-4, -1)$



2)  $y = -\frac{2}{3}x - 3$   
 $y = x + 2$

$(-3, -1)$



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## **Inequalities**

When you replace the equals sign in a linear equation by one of the inequality symbols, you now have a

**Example:**

**$>$**

Greater than  
More than

**$<$**

Less than  
Fewer than

**$\geq$**

Greater than  
or equal to

**$\leq$**


Less than or equal to


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## **Graphing Inequalities**

**First...**

**$<$  or  $>$**  

**$\leq$  or  $\geq$**  

**Then...**

**$<$  or  $\leq$  shade DOWN ▼**

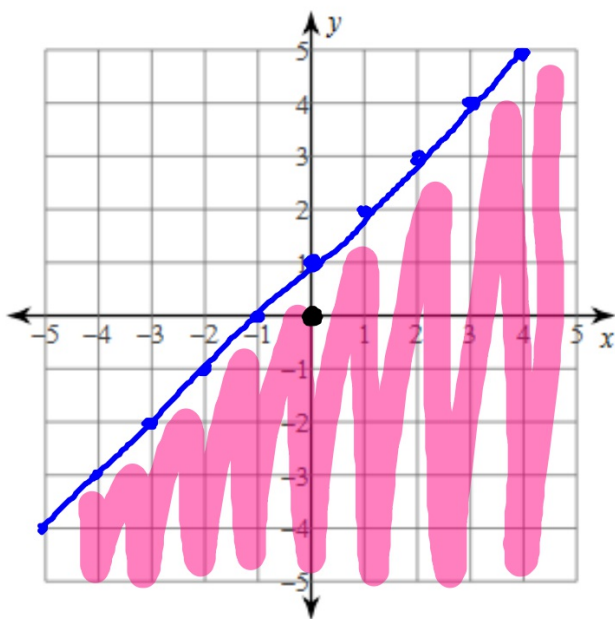
**$>$  or  $\geq$  shade UP ▲**

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## Example

$$y \leq x + 1$$



Check:

Pick a point on  
either side of  
the graph.

Let's try (0, 0):

Does the point  
satisfy the  
inequality?

$$0 \leq 0 + 1$$

$$0 \leq 1$$

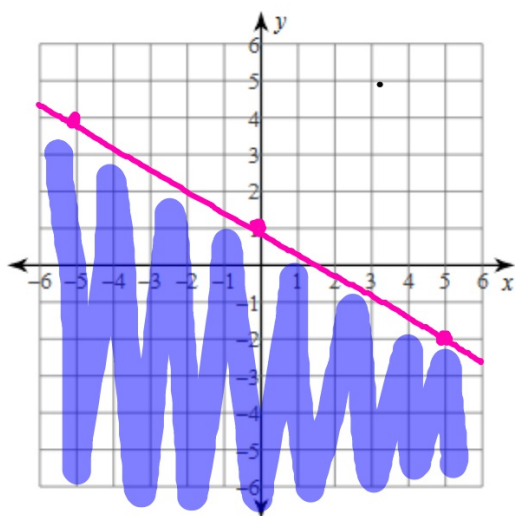
**TRUE**

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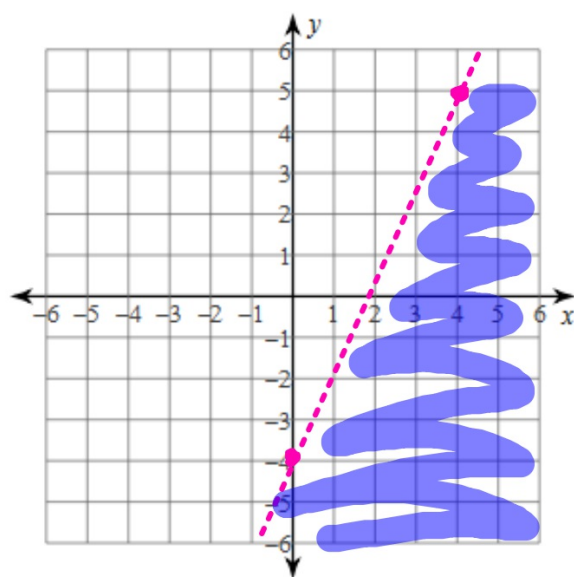
## More Examples

Sketch the graph of each linear inequality.

1)  $y \leq -\frac{3}{5}x + 1$

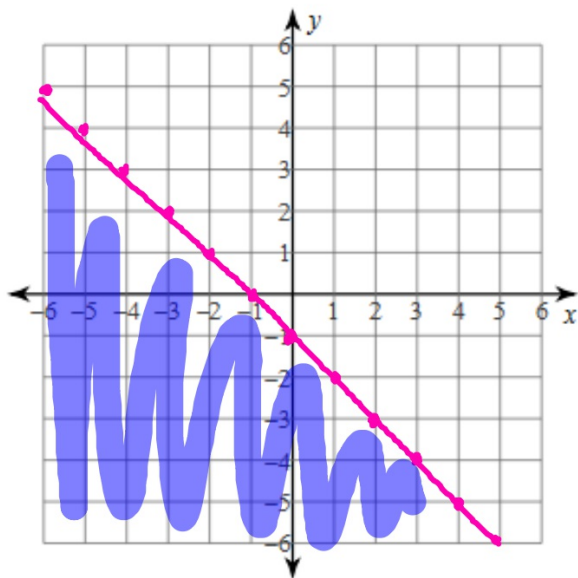


2)  $y < \frac{9}{4}x - 4$



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3)  $y \leq -x - 1$



4)  $y \geq \frac{3}{4}x - 1$

