

The slide features a light beige background with a blue grid pattern in the top-left and bottom-right corners. A dark blue rectangular area is positioned on the left side, containing the text. A vertical red bar is located on the far left edge of the slide.

# Algebra 1

Chapter 3  
Section 3-1

# Vocabulary

Inequality

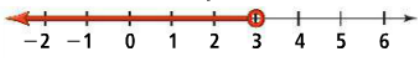
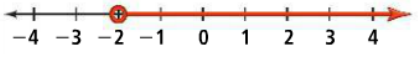

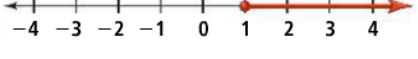
Mathematical sentence that compares the values of two expressions

Solution  
(Inequality  
)

Any number substituted for a variable that makes an inequality true

# Inequalities

## Concept Summary Representing Inequalities

Words	Symbols	Graph
$x$ is less than 3.	$x < 3$	
$x$ is greater than -2.	$x > -2$	
$x$ is less than or equal to 0.	$x \leq 0$	
$x$ is greater than or equal to 1.	$x \geq 1$	

# Number Lines

What is the graph of  $2 \geq a$ ?

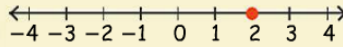
**Think**

If 2 is greater than or equal to  $a$ , then  $a$  must be less than or equal to 2.

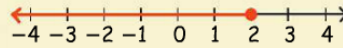
**Write**

$$a \leq 2$$

$a \leq 2$  means all real numbers  $a$  that are less than or equal to 2. Since 2 is a solution, draw a closed dot at 2.



The numbers less than 2 are to the left of 2 on the number line. Shade to the left of 2.



# Identifying Solutions

Is -3 a solution of:

$$x + 4 > 0$$

$$11 - 3x < 20$$

Is 7 a solution of:

$$11x - 10 \geq 5x + 25$$

$$2(x + 1) \leq 3x - 5$$

$$-3 + 4 > 0$$

$$1 > 0$$

True, so yes

$$11 - 3(-3) < 20$$

$$11 + 9 < 20$$

$$20 < 20$$

False, so no

$$11(7) - 10 \geq 5(7) + 25$$

$$77 - 10 \geq 35 + 25$$

$$67 \geq 60$$

True, so yes

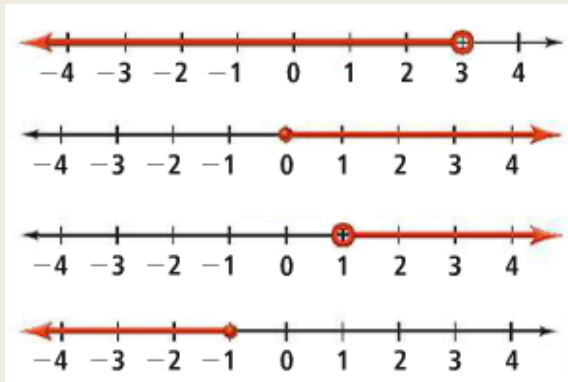
$$2(7 + 1) \leq 3(7) - 5$$

$$2(8) \leq 21 - 5$$

$$16 \leq 16$$

True, so yes

# Identifying an Inequality From a Graph



- $x < 3$
- $x \geq 0$
- $x > 1$
- $x \leq -1$

# Writing an Inequality From a Description or Statement

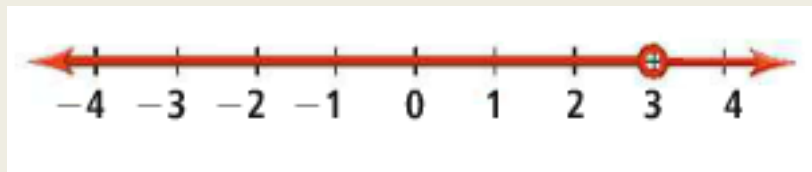
What inequality describes the situation? Be sure to define a variable.



# Not Equal

Graph on a number line:

$$x \neq 3$$



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