

Tx+ Page **200** (1-11)

Graph the numbers on the same number line.

1. 4 2. -3 3. $\frac{3}{2}$ 4. 0 5. 1.5

Oct 4-11:02 AM

Complete each statement with $<$, $=$, or $>$.

6. $-3 > -5$ 7. $4.29 \approx 4.8$

8. $(-3)(-4) = 12$ 9. $-1 - 2 = 6 - 9$
 $12 = 12$ $-3 = -3$

10. $-\frac{2}{3} > -\frac{4}{5}$ 11. $\frac{1}{3} + \frac{1}{2} > \frac{1}{2} + \frac{1}{3}$

$-.75 > -.80$ $\frac{2}{3} < 1$

Oct 4-11:22 AM

Lesson 4-1 10/5 Day 29 Inequalities and Their Graphs

Lesson Objectives Identify solutions of inequalities Graph and write inequalities	NAEP 2005 Strand: Algebra Topics: Variables, Expressions, and Operations; Equations and Inequalities Local Standards:
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Vocabulary
 A solution of an inequality is any # that makes the inequality true.

Oct 5-4:26 AM

Examples

1. Identifying Solutions by Evaluating Is each number a solution of $3 + 2x < 8$?

a. -2 $3 + 2x < 8$
 $3 + 2(-2) < 8$ ← Substitute for x → $3 + 2(\underline{-2}) < 8$
 $3 - 4 < 8$ ← Simplify → $3 + \underline{6} < 8$
 $-\underline{1} < 8$ ← Compare → $\underline{9} < 8$
-2 is a solution. 3 is not a solution.

Oct 5-4:27 AM

② Graphing Inequalities

a. Graph $d < 3$.

b. Graph $-3 \geq g$.

less than $<$

less than or equal to \leq

$<$ $>$ open circle ○

\leq \geq closed circle ●

If the variable is on the left

$x > 5$ greater than $>$

$x \geq 5$ greater than or equal to \geq

Shade to the right

If it's a less than ($<$) or a less than or = to (\leq) Shade left

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③ Writing an Inequality From a Graph Write an inequality for each graph.

a. $x < 2$ Numbers to the left of 2 are graphed.

b. $x \leq -3$ Numbers less than -3 are graphed.

open $<$

closed \leq

$-3 \leq -3$ T

$-3 < -3$ F

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Quick Check

1. Is each number a solution of $6x - 3 > 10$?

a. 1

$6(1) - 3 > 10$
 $3 > 10$ NO

b. 2

$6 \cdot 2 - 3 > 10$
 $12 - 3 > 10$
 $9 > 10$ NO

c. 3

$6(3) - 3 > 10$
 $15 > 10$ yes

$6x - 3 > 10$
 $6(4) - 3 > 10$
 $24 - 3 > 10$
 $21 > 10$ (yes) ✓

Oct 5-4:28 AM

2. Graph each inequality.

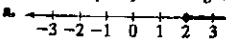
a. $a \leq 2$

b. $n \geq -3$

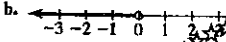
c. $2 > p$ Flip before graphing

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3. Write an inequality for each graph.

a. 

$$g \geq 2$$

b. 

$$x < 0$$

Oct 5-4:28 AM

Mental Math: Is each number following the inequality a solution of the given inequality? p. 202

1. $v \geq -5$ (4) 2. $0.5 > c$; 2 3. $b < 4$; (-0.5)

$4 \geq -5$ true $.5 > 2$ NO $-5 < 4$ yes

5. $g \leq \frac{12}{3}$ (3) 6. $k < 0$; (-1) 7. $a > 3$; 2.3 NOPE

$3 \leq \frac{12}{3}$ NO $-1 < 0$ yes $3 > 3.2$

8. $x \geq -2.5$; -2.5

$-2.5 \geq -2.5$ yes

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8 > -1

Is each number a solution of the given inequality?

9. $3x - 7 > -1$ a. 2 b. 0 c. 5

10. $4n - 7 \leq 5$ a. 2 b. 3 c. -1

11. $2y + 1 < -3$ a. 0 $3 < -3$ b. -2 a. -1

12. $\frac{4-m}{m} \geq 5$ a. 0.5 $7 \geq 5$ b. 2 c. -4

13. $\frac{n(n-3)}{3(3-3)} < 54$ a. 9 $0 < 54$ b. 3 c. 10

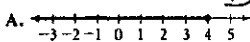
14. $5(2q - 8) \geq 7$ a. -2 b. $\frac{2}{5}$ c. 6

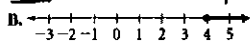
$5(2 \cdot 6 - 8) \geq 7$
 $5(12 - 8) \geq 7$
 $5(4) \geq 7$
 $20 \geq 7$

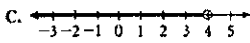
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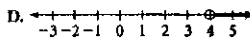
Match each inequality with its graph.

15. $x < 4$ C 16. $x \geq 4$ B 17. $x > 4$ D 18. $x \leq 4$ A

A. 

B. 

C. 

D. 

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Graph each inequality. $S \leftarrow -3$

19. $x > 1$ 20. $s < -3$ 21. $y \leq -4$

23. ~~$-2 < d$~~ 24. $\frac{1}{2} \leq b$ 25. $7 \geq a$ $a \leq 7$

$d \geq -2$ $b \geq -\frac{3}{2}$ $-\frac{3}{2}$

~~$-4 < 2 < 1 < 0$~~ ~~$5 < 6 < 7 < 8 < 9$~~

Oct 4-11:03 AM

Write an inequality for each graph.

27. $x > -3$

28. $x \leq 7$

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Write an inequality for each graph.

29. $x \geq 1$

30. $x < -1$

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Define a variable and write an inequality to model each situation.

33. A bus can seat at most 48 students. at most \leq
 $B \leq 48$

34. In many states, you must be at least 16 years old to obtain a driver's license.
 $x \geq 16$

35. It is not safe to use a light bulb of more than 60 watts in this light fixture.
 $L \leq 60$

36. At least 350 students attended the band concert Friday night.
 $x \geq 350$

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