

Name: _____ Period: _____ Date: _____

LINEAR INEQUALITIES Exit Quiz

Express the following intervals as sets

1. $(2, 10)$

2. $(-\infty, 3]$

3. $[1, 7)$

Express the following sets as intervals

4. $\{x | x \in R, 4 \leq x \leq 8\}$

5. $\{x | x \in R, x > -2\}$

Solve the following inequalities and graph its solution

6. $4x + 6 \leq 2x + 10$

7. $2(x - 4) < x - 3$

LINEAR INEQUALITIES Exit Quiz

ANSWERS

Express the following intervals as sets

Remember that: \leq, \geq are represented with $[a, b]$

$<, >$ are represented with (a, b)

1. $(2, 10)$

All x such that x is greater than 2 and less than 10

$$\{x | x \in R, 2 < x < 10\}$$

2. $(-\infty, 3]$

All x such that x is less or equal than 3.

$$\{x | x \in R, x \leq 3\}$$

3. $[1, 7)$

All x such that x is greater than or equal to 1 and less than 7.

$$\{x | x \in R, 1 \leq x < 7\}$$

Express the following sets as intervals

Remember that:

$$\{x | x \in R, x < a\} = (-\infty, a)$$

$$\{x | x \in R, x > a\} = (a, \infty)$$

$$\{x | x \in R, x \leq a\} = (-\infty, a]$$

$$\{x | x \in R, x \geq a\} = [a, \infty)$$

$$\{x | x \in R, a \leq x \leq b\} = [a, b]$$

$$\{x | x \in R, a < x \leq b\} = (a, b]$$

$$\{x | x \in R, a \leq x < b\} = [a, b)$$

LINEAR INEQUALITIES Exit Quiz

$$\{x|x \in R, a < x < b\} = (a, b)$$

4. $\{x|x \in R, 4 \leq x \leq 8\} = [4, 8]$

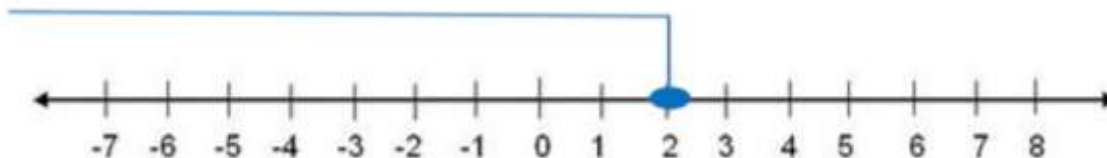
5. $\{x|x \in R, x > -2\} = (-2, \infty)$

Solve the following inequalities and graph its solution

In each inequality we have to solve for x

6. $4x + 6 \leq 2x + 10$

$$4x - 2x \leq 10 - 6 \quad \rightarrow \quad 2x \leq 4 \quad \rightarrow \quad \frac{1}{2}(2x) \leq \frac{1}{2}(4) \quad \rightarrow \quad x \leq 2$$



Solution:

$$\{x|x \in R, x \leq 2\} = (-\infty, 2]$$

7. $2(x - 4) > x - 3$

Applying distributive property:

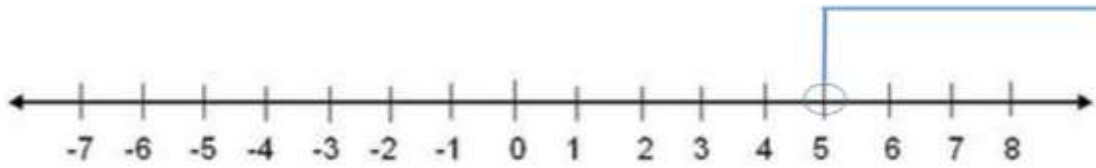
$$2x - 8 > x - 3 \quad \rightarrow \quad 2x - x > -3 + 8$$

Solving for x:

$$x > 5$$

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Solution:

$$\{x|x \in R, x > 5\} = (5, \infty)$$