

Name: _____

Date: _____

UNIT 6

LESSON 6

Do Now:



a. Graph $\{x \mid -2 < x \leq 5\}$ on a number line.

b. Graph $\{x \mid x > 3\}$ on a number line.

AIM: EXPRESSING SOLUTIONS IN SET BUILDER NOTATION & INTERVAL NOTATION

- _____: a collection of distinct objects or elements
- _____: a list of elements in a set

1. Write a roster for the set for the following:

a. whole #'s less than 5

b. integers from -3 to 2 inclusively

- _____ **Notation** - mathematical shorthand for precisely stating all numbers of a specific set that possess a specific property
- _____: "x is an element of all real numbers"
- _____: "x such that....."
- Ex: $\{x \mid 2 \leq x \leq 6\}$: "x such that x is _____ 2 and x is _____ 6"

2. Write **set builder notation** for the following.

a) Real #'s greater than 0	b) Real #'s less than or equal to 5
c) Real #'s from 8 to 20 inclusive	d) Real #'s between 4 to 20



- _____ **Notation**- a way of writing inequality expressions.

Open Interval

- endpoints not included
- circles are open
- Use parentheses
- Infinity always has parenthesis

Example: (2,6)



Closed Interval

- endpoints included
- circles are closed
- Use brackets

Example: [2,6]

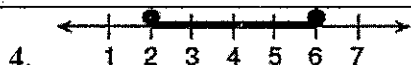


Now let's go back to #2 and write the examples in Interval Notation!

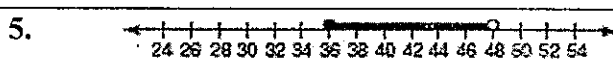
3. Write the following using **interval notation** for the following:

a) x is greater than or equal to -5 and less than 2.	b) $-3 < x \leq 12$	c) $-\infty < x < 12$	d) x is greater than 0 and less than or equal to 3
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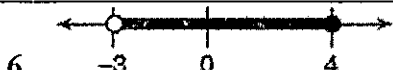
Express the solutions in **set-builder notation** for part (a) and express the solutions in **interval notation** for part (b).



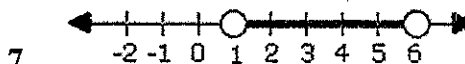
- a) Set-builder notation
- b) Interval notation



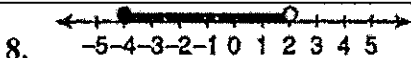
- a) Set-builder notation
- b) Interval notation



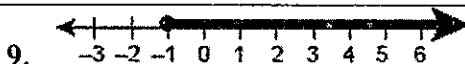
- a) Set-builder notation
- b) Interval notation



- a) Set-builder notation
- b) Interval notation



- a) Set-builder notation
- b) Interval notation



- a) Set-builder notation
- b) Interval notation