DO NOW

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2.6 Inequalities and Interval Notation

1. Which of the following is a member of the solution set of $-5 \le x < 3$?

   x is between −5 and 3 can be −5. Can't be 3

   a. -6 b. 5 c. -5 d. 3

   replacement set (what you are allowed to use)

2. If the domain for x is {-4, -3, -2, -1, 0, 1, 2}, what is the solution set (or range) of answers for $2x + 3 < -1$?

   $\{-4, -3\}$

   $2x < -1 - 3$
   $2x < -4$
   $x < \frac{-4}{2}$
   $x < -2$

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Interval Notation -

open circles are shown using: parentheses ( ) (< , >)

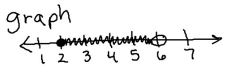
closed circles are shown using: brackets [ ] (≤ , ≥)

arrows are shown using: ∞ if going right, $-\infty$ if going left (*Always with ( )*)

Example: $2 \le x < 6$

$[2, 6)$

graph



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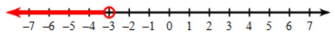
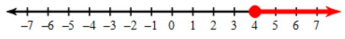
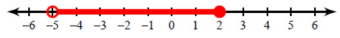
a. Write the inequality represented by each graph.
b. Write using interval notation.

3. 

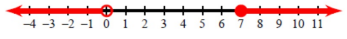
   a. $x < -3$
   b. $(-\infty, -3)$

4. 

   a. $x \ge 4$
   b. $[4, \infty)$

5. 

   a. $-5 < x \le 2$
   b. $(-5, 2]$

6. 

   a $(x < 0) \vee (x \ge 7)$
   b. $(-\infty, 0) \vee [7, \infty)$

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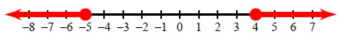
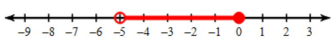
7. 

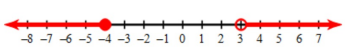
   a. $(x \le -5) \vee (x \ge 4)$
   b. $(-\infty, -5] \vee [4, \infty)$

8. 

   a. $-5 < x \le 0$
   b. $(-5, 0]$

9. 

   a. $1 \le x \le 7$
   b. $[1, 7]$

10. 

    a. $(x \le -4) \vee (x > 3)$
    b. $(-\infty, -4] \vee (3, \infty)$

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HOMEWORK

Worksheet - HW 2.6 Inequalities Review

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