Precalculus Practice A.REI.D.11: Absolute Value Inequalities
www.jmap.org   NAME:_____

Solve: Graph:

1. $|2x-1| \leq 1$

    [A] $x < 0$ or $x > 1$ [B] $0 < x < 1$

    [C] $0 \leq x \leq 1$ [D] $x \leq 0$ or $x \geq 1$

                           [1] _____

5. $|2x-1| \leq 3$

[A]

[B]

[C]

[D]

                           [5] _____

2. $|2x-1| \leq 2$

    [A] $-\dfrac{1}{2} \leq x \leq \dfrac{3}{2}$ [B] $-\dfrac{1}{2} < x < \dfrac{3}{2}$

    [C] $x < -\dfrac{1}{2}$ or $x > \dfrac{3}{2}$

    [D] $x \leq -\dfrac{1}{2}$ or $x \geq \dfrac{3}{2}$

                           [2] _____

6. $|2x+1| \leq 3$

[A]

[B]

[C]

[D]

                           [6] _____

3. $|x-3| < 9$

    [A] $x \leq -6$ or $x \geq 12$

    [B] $-6 < x < 12$ [C] $x < -6$ or $x > 12$

    [D] $-6 \leq x \leq 12$

                           [3] _____
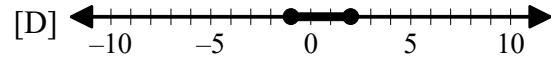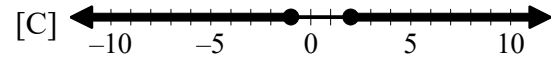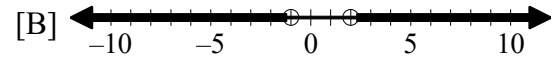
7. $|2x+1| > 4$

[7]

4. $|x+5| > 4$ [4] _____

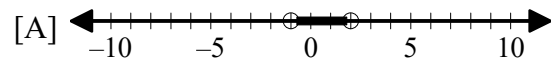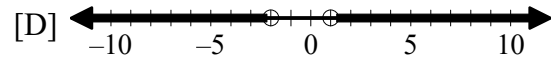   [A] $-9 \leq x \leq -1$

    [B] $x \leq -9$ or $x \geq -1$

    [C] $-9 < x < -1$

    [D] $x < -9$ or $x > -1$

8. $|2x+1| > 3$

[8]
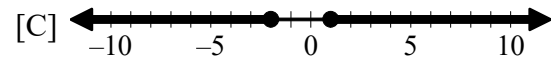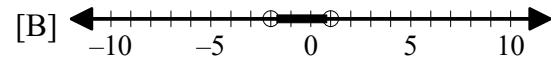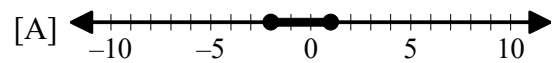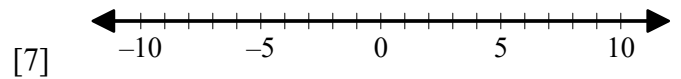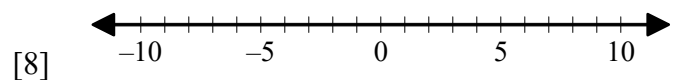
9. Compare the quantities in Column A and Column B.

Column A	Column B
the least positive integer that is a solution to $\lvert 2x \rvert \geq -4$	the least positive integer that is a solution to $\lvert 2x \rvert \geq 4$

   [A] The quantity in Column A is greater.   [B] The quantity in Column B is greater.

   [C] The quantities are equal.

   [D] The relationship cannot be determined from the information given.

                                                                        [9] _____

10. Compare the quantities in Column A and Column B.

Column A	Column B
the least number that is a solution to $\lvert x \rvert \leq 2$	the greatest number that is a solution to $\lvert x \rvert \geq 2$

    [A] The quantity in Column A is greater.   [B] The quantity in Column B is greater.

    [C] The quantities are equal.

    [D] The relationship cannot be determined from the information given.

                                                                        [10] _____

Solve:

11. $\lvert x + 4 \rvert \leq 2$

                                                [11] _____

12. $\lvert x - 2 \rvert \geq 1$

                                                [12] _____

[1] C

[2] A

[3] B

[4] D

[5] D

[6] A

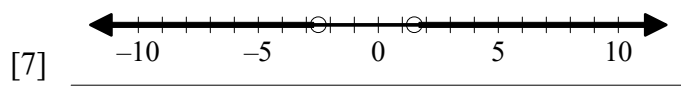$$x < -\frac{5}{2}, \quad x > \frac{3}{2}$$

[7]
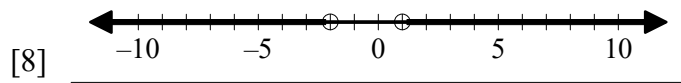

$$x < -2, \quad x > 1$$

[8]

[9] A

[10] B

[11] $-6 \le x \le -2$

[12] $x < 1 \text{ or } x > 3$