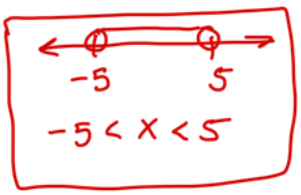
Test : U1A L10 Absolute Value Inequalities Name: KEY HR: _____

Solve the following absolute value inequalities or equations and graph the solutions.

1. $|x| < 5$ — less Than and

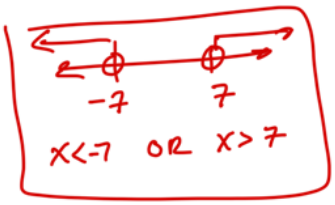
$x < 5$ $x > -5$



$-5 < x < 5$

2. $|x| > 7$ — great OR

$x > 7$ OR $x < -7$



$x < -7$ OR $x > 7$

3. $|x| \leq 0$

$x \leq 0$ and $x \geq 0$



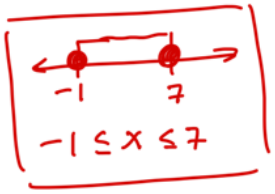
They over lap at 1 pt. $\boxed{x = 0}$

4. $|x - 3| \leq 4$

$x - 3 \leq 4$ and $x - 3 \geq -4$

$+3 \quad +3$ $+3 \quad +3$

$x \leq 7$ and $x \geq -1$

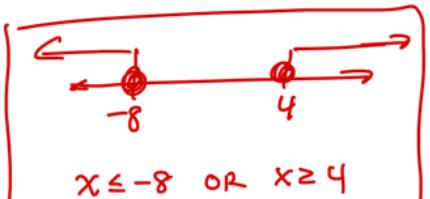


$-1 \leq x \leq 7$

5. $|x + 2| \geq 6$ — P

$x + 2 \geq 6$ OR $x + 2 \leq -6$

$x \geq 4$ OR $x \leq -8$

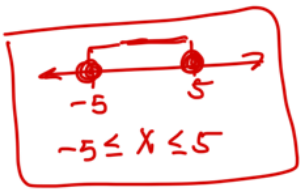


$x \leq -8$ OR $x \geq 4$

6. $|2x| \leq 10$ — of

$2x \leq 10$ and $2x \geq -10$

$x \leq 5$ and $x \geq -5$



$-5 \leq x \leq 5$

7. $3|x - 2| > 9$

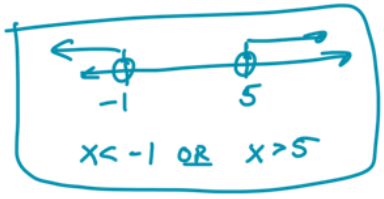
$\frac{3}{3} \quad \frac{9}{3}$

$|x - 2| > 3$

$x - 2 > 3$ OR $x - 2 < -3$

$+2 \quad +2$ $+2 \quad +2$

$x > 5$ OR $x < -1$



$x < -1$ OR $x > 5$

8. $2|x - 1| + 3 \leq 11$

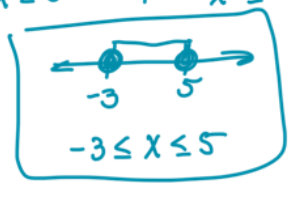
$\frac{2|x-1|}{2} \leq \frac{8}{2}$

$|x - 1| \leq 4$

$x - 1 \leq 4$ and $x - 1 \geq -4$

$+1 \quad +1$ $+1 \quad +1$

$x \leq 5$ & $x \geq -3$



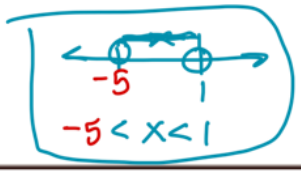
$-3 \leq x \leq 5$

9. $-4|x+2| > -12$

$|x+2| < 3$

$x+2<3$ & $x+2>-3$

$x<1$ & $x>-5$



$-5 < x < 1$

10. $5 - |2x-1| \geq 0$

$-|2x-1| \geq -5$

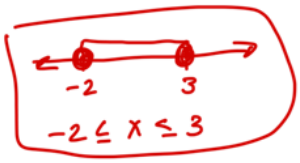
$|2x-1| \leq 5$

Flip, change

$2x-1 \leq 5$ and $2x-1 \geq -5$

$2x \leq 6$ and $2x \geq -4$

$x \leq 3$ and $x \geq -2$



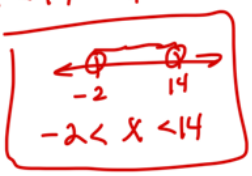
$-2 \leq x \leq 3$

11. $\frac{1}{2}|x-6| < 4$

$|x-6| < 8$

$x-6<8$ and $x-6>-8$

$x<14$ & $x>-2$



$-2 < x < 14$

12. $|3x-2|+1 \geq 2x+5$

$|3x-2| \geq 2x+4$

$3x-2 > 2x+4$ OR $3x-2 \leq -(2x+4)$

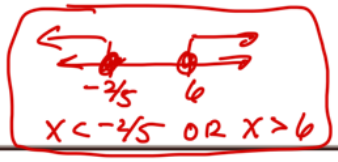
$x-2>4$

$x>6$

$3x-2 \leq -2x-4$

$5x \leq -2$

$x \leq -\frac{2}{5}$

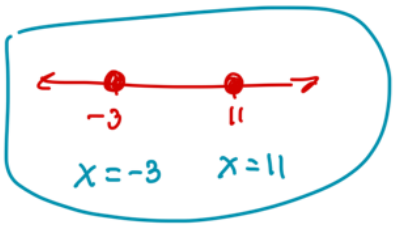


$x \leq -\frac{2}{5}$ OR $x > 6$

13. $|x-4| = 7$

$x-4=7$ $\quad$ $x-4=-7$

$x=11$, $x=-3$



$x=-3$ $\quad$ $x=11$

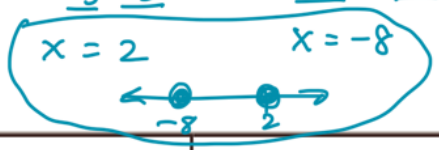
14. $2|x+3|+5=15$

$2|x+3| = 10$

$|x+3| = 5$

$x+3=5$ OR $x+3=-5$

$x=2$ $\quad$ $x=-8$



15. If $-|3-3a| = -12$ which of the following could be the value of a?

$|3-3a| = 12$

$3-3a=12$ $\quad$ $3-3a=-12$

$-3a=11$ $\quad$ $-3a=-15$

$a=-11$ $\quad$ $a=5$

A. 5 B. 4 C. 3 D. 2 E. 1

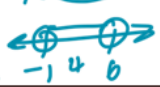
16. If $|2x-5| < 7$, which one of the following could be the value of x?

$2x-5<7$ $\quad$ $2x-5>-7$

$2x<12$ $\quad$ $2x>-2$

$x<6$ $\quad$ $x>-1$

A. -2 B. 5 C. 4 D. 10 E. 12



17. Which of the following is NOT a solution to $-3 < 2x+1 \leq 7$

$-4 < 2x \leq 6$

$-2 < x \leq 3$

A. 0 B. 2 C. 1 D. 3 E. -5

