Compound and Absolute Value Inequalities   Name_____

Compound Inequalities

Intersection is an "and" statement

Union is an "or" statement

$(-\infty, 2] \cup (4, \infty)$ $(-\infty, 2] \cap (4, \infty)$ $(-\infty, 2] \cup (-1, \infty)$

$-2x + 3 > 4x - 5$ or $\dfrac{3}{4}x < \dfrac{7}{5}x - 9$ $-2x + 3 > 4x - 5$ and $\dfrac{3}{4}x < \dfrac{7}{5}x - 9$

$-3 < 5x - 2(7x - 8) \leq 4$

- Absolute Value Inequalities
  - $|x| < p$: less than is an "and" statement
    - $x < p$ **and** $-x < p$

$|2x - 3| < 9$

$|4x - 3| \leq 2$

- $|x| > p$: greater than is an "or" statement

$|x-9| > 4$

$|6x+7| > 5$

$6 - 2|5x+7| < 9$

$9 + 4|2x-1| \geq 5$

$|5x+7| < -2$

$|5x+7| \geq -2$