Day 4 Semester 1 Review: **Snowball Fight** Name Key

Express the solution to the inequality in both inequality notation and interval notation.

1. 

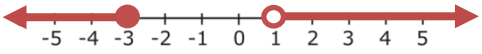
Inequality Notation: $x > -1$

Interval Notation: $[-1, \infty)$

2. 

Inequality Notation: $x < 2$

Interval Notation: $(-\infty, 2)$

3. 

Inequality Notation: $x \leq -3$ OR $x > 1$

Interval Notation: $(-\infty, -3] \cup (1, +\infty)$

4. 

Inequality Notation: $-2 < x \leq 4$

Interval Notation: $(-2, 4]$

Solve and Graph Linear Inequalities with Interval Notation

Solve, graph, and state the solutions.

5) $6x + 2 + 6x < 14$

$12x + 2 < 14$

$-2 \quad -2$

$\frac{12x}{12} < \frac{12}{12}$

$x < 1$

6) $-7a - 6 \leq 15$

$+6 \quad +6$

$\frac{-7a}{-7} \leq \frac{21}{-7}$

$a \geq -3$

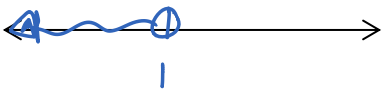
7) $28 + 7x \geq 7(x - 3)$

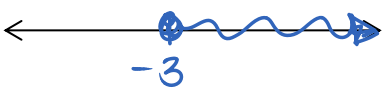
$28 + 7x \geq 7x - 21$

$-7x \quad -7x$

$28 \geq -21$

true





Inequality notation: $x < 1$

Interval notation: $(-\infty, 1)$

Inequality notation: $x \geq -3$

Interval notation: $[-3, +\infty)$

Inequality notation: $\mathbb{R}$

Interval notation: $(-\infty, +\infty)$

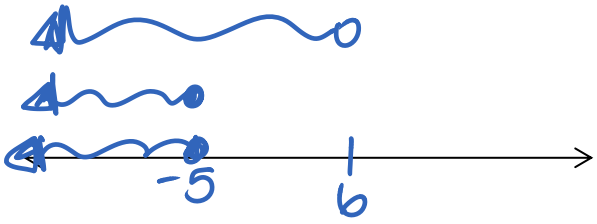
Solve and Graph Compound Inequalities

Solve, graph, and state the solutions.

8) $3x \le -15$ and $-10 + x < -4$

$\frac{3x}{3} \le \frac{-15}{3}$ and $-10+10+x < -4+10$

$x \le -5$ and $x < 6$



Inequality notation: $x \le -5$

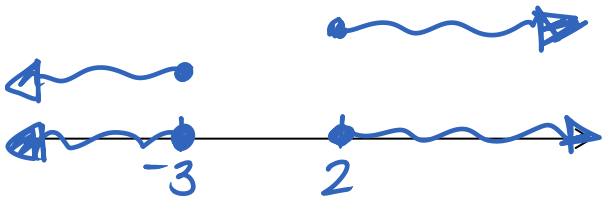
Interval notation: $(-\infty, -5]$

9) $-3x \ge 9$ OR $7x - 6 \ge 8$

$\frac{-3x}{-3} \ge \frac{9}{-3}$ OR $7x - 6 + 6 \ge 8 + 6$

$x \le -3$ OR $\frac{7x}{7} \ge \frac{14}{7}$

$x \ge 2$



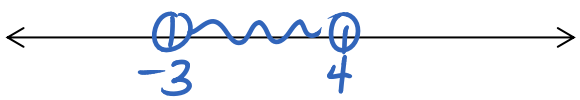
Inequality notation: $x \le -3$ or $x \ge 2$

Interval notation: $(-\infty, -3] \cup [2, +\infty)$

10) $-24 < 8x \le 32$

$\frac{-24}{8} < \frac{8x}{8} \le \frac{32}{8}$

$-3 < x \le 4$



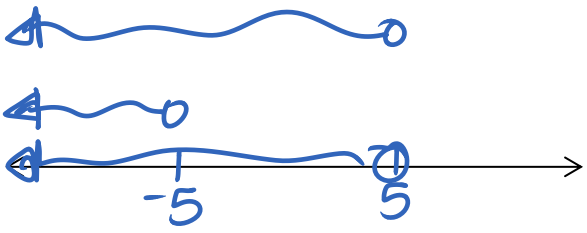
Inequality notation: $-3 < x \le 4$

Interval notation: $(-3, 4]$

11) $v + 13 < 8$ OR $-8v > -40$

$-13 - 13 < 8 - 13$ OR $\frac{-8v}{-8} < \frac{-40}{-8}$

$v < -5$ OR $v < 5$



Inequality notation: $x < 5$

Interval notation: $(-\infty, 5)$