Key

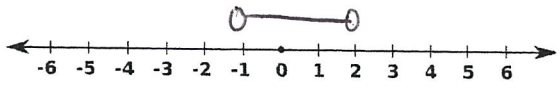
Algebra 1
Unit 3, Lesson 3 Notes
Compound Inequalities

Essential Question: How do I solve compound inequalities?

Practice graphing compound inequalities.

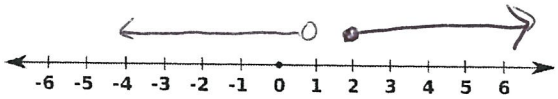
Graph:

1) $-1 < x < 2$



"dumbbell"

2) $x < 1$ or $x \geq 2$

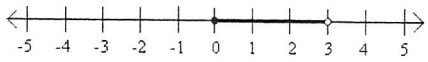


"GAPS"

Practice writing compound inequalities.

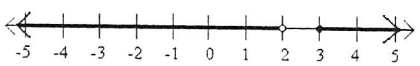
Write a compound inequality for the graph shown.

1)



$0 \leq x < 3$

2)



$x < 2$ or $x \geq 3$

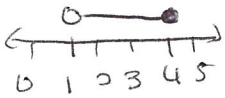
Solve and graph compound inequalities.

Solve. Graph your answer on a number line.

1) $-4 < 6x - 10 \leq 14$

$\frac{6}{6} < \frac{6x}{6} \leq \frac{24}{6}$

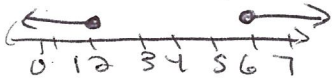
$1 < x \leq 4$



2) $3x + 5 \leq 11$ or $5x - 7 \geq 23$

$3x \leq 6$ $\quad 5x \geq 30$

$x \leq 2$ or $x \geq 6$

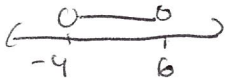


3) $-1 < 2x + 7 < 19$

$-7 \quad -7 \quad -7$

$-8 < 2x < 12$

$-4 < x < 6$



4) $-8 \leq -x - 5 \leq 6$

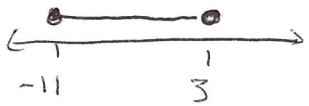
$+5 \quad +5 \quad +5$

$-3 \leq -x \leq 11$

$3 \geq x \geq -11$

$-11 \leq x \leq 3$

* VSC! Smaller # x Bigger #



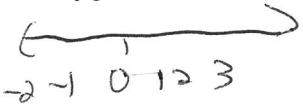
5) $14 < 3x + 2 < 2$

$12 < 3x < 0$

$4 < x < 0$

NO solution!

Be careful! *



6) $-3x \geq -6$ or $-3x \leq 6$

$x \leq 2$ or $x \geq -2$

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