

Oct 26th

3-1 Inequalities/Graphs

* a solution to an inequality is any number that makes the inequality true *

$$x \geq 4.1$$

$$x = 4.1, 4.11, 8, 632$$

these are solutions to the

$$4.1 \geq 4.1$$

True

$$4.11 \geq 4.1$$

True

inequality

$$3 \geq 4.1$$

False

- not a solution
to $x \geq 4.1$

$$2 - 5x > 13$$

$$2 - 5(-4) > 13$$

$$2 + 20 > 13$$

$$22 > 13$$

True

$$x = -4$$

this is a
solution

$$2 - 5x > 13 \quad x = 10$$

$$2 - 5(10) > 13$$

$$2 - 50 > 13$$

$$-48 > 13$$

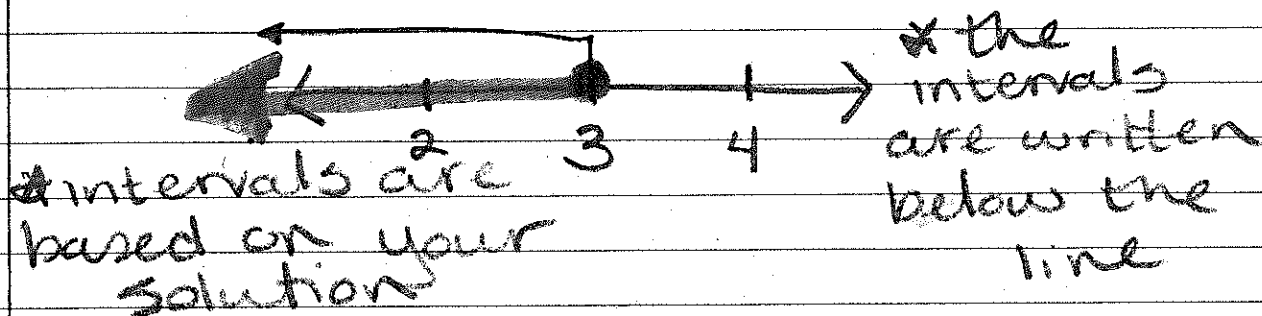
False

this is
NOT a
solution

Graphing Inequalities

$$x \leq 3$$

1. Make a Number Line

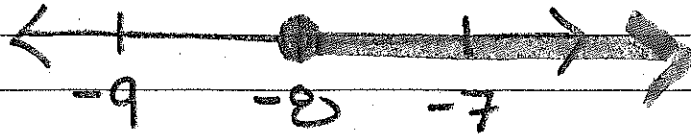


2. ● Closed Dot (\leq or \geq)

3. ○ Open Dot ($<$ or $>$)

4. Always have the variable on the left side of the inequality symbol.

$$x \geq -8$$

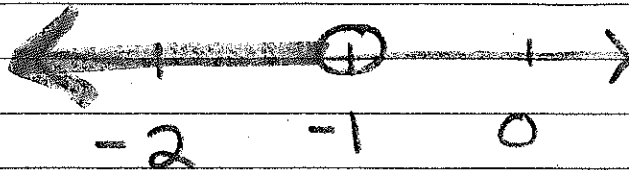


- <
- less than
- smaller than
- fewer than
- lower than

$$-1 > d$$

equivalent \Leftrightarrow

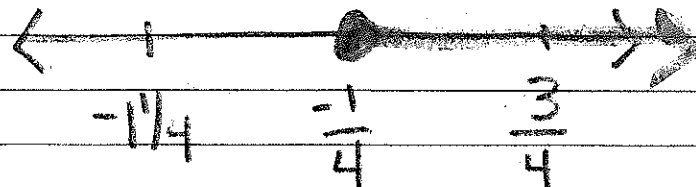
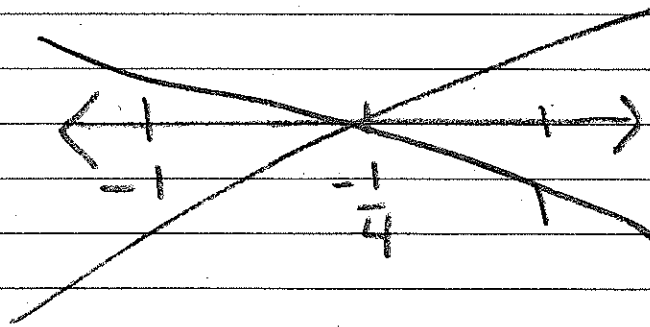
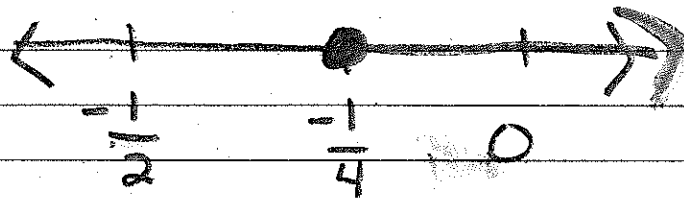
$$d < -1$$



$$-\frac{1}{4} \leq z$$

equivalent \Leftrightarrow

$$z \geq -\frac{1}{4}$$



<

- less than
- smaller than
- fewer than
- lower than

>

- greater than
- bigger than
- more than
- larger than

≤

- less than or equal to
- at most
- no more than
- maximum

≥

- greater than or equal to
- at least
- no less than
- minimum
- no smaller than