

$$14. \quad \begin{array}{r} 1.9\Delta + 6 = 3.1 - \Delta \\ + 1.0\Delta \\ \hline \end{array}$$

$$2.9\Delta + 6 = 3.1$$

$$\begin{array}{r|l} D & U \\ \hline -2.9 & -6 \\ + 6 & \div 2.9 \end{array}$$

1. $n \leq 45$

2. $t > 60$

3. $n > 8000$

4. false

5. true

9.) $z \leq 2$



6. $x < -1$



7. $y \geq 5$



8. $w > 9$



10. $n \leq -2$

11. $y > 5$

$$4. \quad 13 - x < 4 \quad x \neq 9$$

$$13 - 9 < 4$$

$$4 < 4 \quad \text{False}$$

$$45 > \frac{2x}{20} - 5 \quad x = 20$$

$$45 > 40 - 5$$

$$45 > 35 \quad \text{True}$$

Inequality Foldable

$<$
\leq
$>$
\geq
\neq

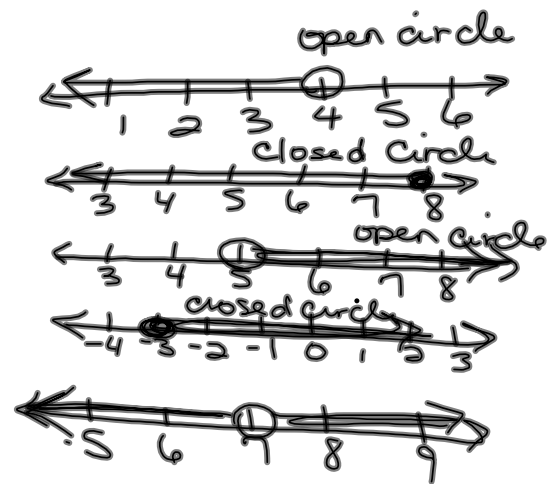
$$b < 4$$

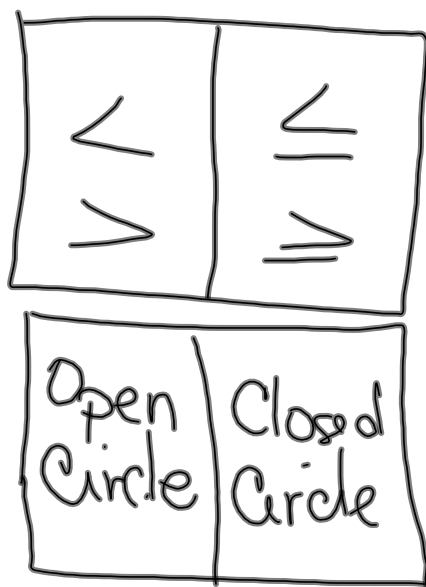
$$n \leq 8$$

$$a > 5$$

$$z \geq -3$$

$$d \neq 7$$

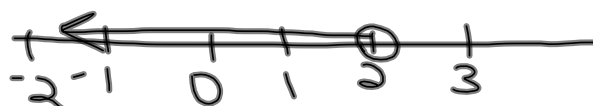




Order Matters

Variable	Inequality symbol	Constant
n	$<$	2

Always, shade in the direction of
the arrow! \Downarrow



Inequalities: Order Matters!

variable

inequality symbol

constant

If you have to flip-flop the sides of the inequality, then you must also flip-flop the inequality symbol

11 is greater than b
 means
 $11 > b$
 also equals -
 $b < 11$
 b is less than 11

Shade in the direction of the inequality



The Golden Rule of Inequalities

When you MULTIPLY or DIVIDE both sides of an inequality by a NEGATIVE you must flip the inequality symbol.

- Steps 1: Isolate the variable on one side \rightarrow constant on the other
2. Check the order: variable symbol constant
 3. Circle the number on the number line
 4. open circle or closed circle?
 5. Shade in the direction of the arrow

open circle > < ≠
closed circle ≥ ≤ =

$$\begin{array}{r}
 5 - 3x < 13 + 1x \\
 \quad \quad \quad -1x \quad \quad \quad -x \\
 \hline
 4 - 4x < 13 \\
 \quad \quad \quad -13 \quad \quad \quad -13 \\
 \hline
 -4x < 9 \\
 \quad \quad \quad -4 \quad \quad \quad -4 \\
 \hline
 x > -2.25
 \end{array}$$

When you multiply or divide by a NEGATIVE flip the inequality