

1-7 5-minute Check

Solve Each Inequality

1. $3x + 7 > 43$

2. $3(3w + 1) \geq 48$

3. $7 + 3y > 2(y + 3) - 2(-1 - y)$

4. $3 + 2x > 3(x - 1)$

Solve:

5. Tom makes \$4.50 an hour. He worked 12 hours one week. If at least one third of his pay is taken out in taxes and other deductions, what is the greatest amount of money he will take home?

1-7 5 minute check

Solve Each Inequality

Answers:

1. $3x + 7 > 43$

1. $x > 12$

2. $w \geq 5$

3. $y < -1$

2. $3(3w + 1) \geq 48$

4. $x < 6$

5. \$36

3. $7 + 3y > 2(y + 3) - 2(-1 - y)$

4. $3 + 2x > 3(x - 1)$

Solve:

5. Tom makes \$4.50 an hour. He worked 12 hours one week. If at least one third of his pay is taken out in taxes and other deductions, what is the greatest amount of money he will take home?

$$\begin{array}{l} \$54.00 \\ \frac{2}{3} \times \leq \$36 \end{array}$$

5-min check solution

1-7

Solving Absolute Value Inequalities

Objective:

Be able to Solve and Graph Absolute Value Inequalities

title 1-7

Definitions:

Compound inequality: A sentence containing two or more inequalities.

(ex: $c > 5$ and $c < 12$ also written $5 < c < 12$)

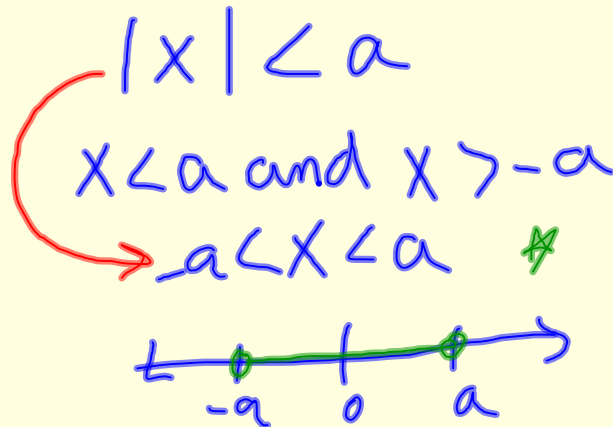
\uparrow
 c is between 5 and 12

definitions 1-7

Intersection- contains the word AND
 (It is true if and only if both parts of it are true.)
 The graph is the intersection of the two parts.
for absolute values: less than=intersection

$$|x| < a$$

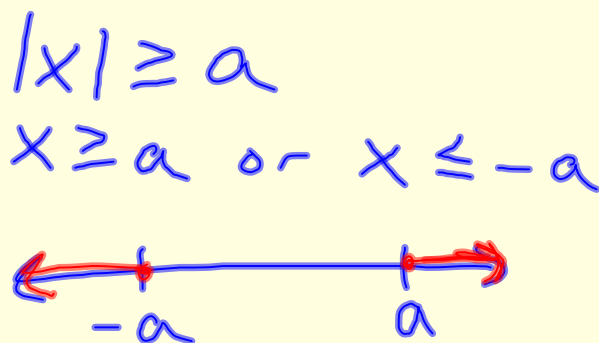
$$x < a \text{ and } x > -a$$

$$\rightarrow -a < x < a \quad \#$$


definitions continued

Union- contains the word OR.
 The graph is all the pieces together on the same
 line.
for absolute values: greater than= union

$$|x| \geq a$$

$$x \geq a \text{ or } x \leq -a$$


definitions continued

Remember:

$|x| >$ neg. number

$$|x| > -4$$

Solution: All Real Numbers

$$\mathbb{R}$$

$|x| <$ neg. number

No Solution

$$\emptyset$$

Remember

Examples:

1. Solve $8 < m + 6 \leq 14$ then graph the solution set.

$$\begin{array}{ccc} -6 & -6 & -6 \\ 2 & < m & \leq 8 \end{array}$$



Solution:

$$\{m \mid 2 < m \leq 8\}$$

check:

$$8 < 3 + 6 \leq 14$$

$$8 < 9 \leq 14$$

example 1 (1-7)

Examples 2:

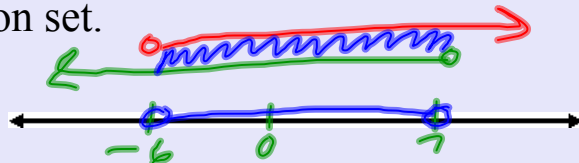
Solve $-3 < 2y + 9$ and $18 > 4y - 10$.

Then Graph the solution set.

Solution:

$$\{y | -6 < y < 7\}$$

$$\begin{array}{l} -3 < 2y + 9 \\ -9 \quad -9 \\ -12 < 2y \\ -6 < y \\ y > -6 \text{ AND} \end{array} \quad \begin{array}{l} 18 > 4y - 10 \\ +10 \quad +10 \\ 28 > 4y \\ 7 > y \\ y < 7 \end{array}$$



example 2 (1-7)

Example 3:

Solve $|8x| \leq 24$

$$\frac{-24}{8} \leq \frac{8x}{8} \leq \frac{24}{8}$$

$$-3 \leq x \leq 3$$



Solution: $\{x | -3 \leq x \leq 3\}$

Example 3 (1-7)

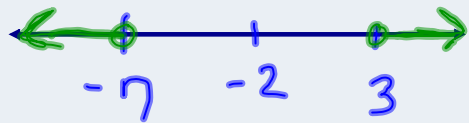
Example 4:

Solve $|x + 2| > 5$.

Graph the solution set.

$$x + 2 > 5 \quad \text{or} \quad x + 2 < -5$$

$$x > 3 \quad \text{or} \quad x < -7$$



Solution:

$$\{x \mid x > 3 \text{ or } x < -7\}$$

Example 4: (1-7)

Assignment:
worksheet

Please begin now and
remember to show your
work!