

12-18-17

Aim: SWBAT review AND SWABT be reintroduced to the purposes of inequalities and graphing on a number line.

HW: Pg. 150 # 2 - 10, 20 (due Wednesday)

Test tomorrow

Do Now: Correct hw

Name Key

Equations Review

Date _____
Period _____

Solve and check algebraically.

<p>1. $\frac{5}{7} \cdot \frac{2}{5}x = 10 \cdot \frac{5}{2}$</p> $x = 25$	<p>Check</p> $\frac{2}{5}x = 10$ $\frac{2}{5} \cdot 25 = 10$ $10 = 10$	<p>2. $4 - 2x = 9$</p> $-2x = 5$ $x = \frac{5}{-2}$	<p>Check</p> $4 - 2x = 9$ $4 - 2\left(\frac{5}{-2}\right) = 9$ $4 - (-5) = 9$ $9 = 9$
<p>3. $\frac{x}{-4} + 8 = -2$</p> $x = 40$	<p>Check</p> $\frac{x}{-4} + 8 = -2$ $\frac{40}{-4} + 8 = -2$ $-10 + 8 = -2$ $-2 = -2$	<p>4. $2 + \frac{x}{-3} = 6$</p> $x = -12$	<p>Check</p> $2 + \frac{x}{-3} = 6$ $2 + \frac{-12}{-3} = 6$ $2 + 4 = 6$ $6 = 6$
<p>5. $17 = -3 - x$</p> $-20 = x$	<p>Check</p> $17 = -3 - x$ $17 = -3 - (-20)$ $17 = 17$	<p>6. $\frac{4}{-3} \cdot \frac{-3}{4}x = 20 \cdot \frac{4}{-3}$</p> $x = \frac{-80}{3}$	<p>Check</p> $\frac{-3}{4}x = 20$ $\frac{-3}{4} \cdot \frac{-80}{3} = 20$ $20 = 20$

Solve and check algebraically.

<p>7. $2x + 3x + 2 = 12$</p> $5x + 2 = 12$ $5x = 10$ $x = 2$	<p>Check</p> $2x + 3x + 2 = 12$ $2 \cdot 2 + 3 \cdot 2 + 2 = 12$ $4 + 6 + 2 = 12$ $12 = 12$	<p>8. $8x - 1 - 5 = 10$</p> $8x - 6 = 10$ $8x = 16$ $x = 2$	<p>Check</p> $8x - 1 - 5 = 10$ $8 \cdot 2 - 1 - 5 = 10$ $16 - 1 - 5 = 10$ $10 = 10$
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Name _____

Date _____

Equations Review

Period _____

<p>9. $6(x+2) = 24$</p> $\begin{array}{r} 6x+12 = 24 \\ -12 \quad -12 \\ \hline 6x = 12 \\ \frac{6x}{6} = \frac{12}{6} \\ x = 2 \end{array}$	<p>Check</p> $\begin{array}{l} 6(x+2) = 24 \\ 6(2+2) \stackrel{?}{=} 24 \\ \quad \checkmark \quad ? \\ 6 \cdot 4 \stackrel{?}{=} 24 \\ 24 = 24 \end{array}$	<p>10. $-2(x+4) = 20$</p> $\begin{array}{r} -2x-8 = 20 \\ +8 \quad +8 \\ \hline -2x = 28 \\ \frac{-2x}{-2} = \frac{28}{-2} \\ x = -14 \end{array}$	<p>Check</p> $\begin{array}{l} -2(x+4) = 20 \\ -2(-14+4) \stackrel{?}{=} 20 \\ \quad \checkmark \quad ? \\ -2(-10) \stackrel{?}{=} 20 \\ 20 = 20 \end{array}$
<p>11. $\frac{1}{5}(5x-25) = 10$</p> $\begin{array}{r} x-5 = 10 \\ +5 \quad +5 \\ \hline x = 15 \end{array}$	<p>Check</p> $\begin{array}{l} \frac{1}{5}(5x-25) = 10 \\ \frac{1}{5}(5 \cdot 15 - 25) \stackrel{?}{=} 10 \\ \quad \checkmark \quad ? \\ \frac{1}{5}(75-25) \stackrel{?}{=} 10 \\ \quad \checkmark \quad ? \\ \frac{1}{5}(50) \stackrel{?}{=} 10 \\ 10 = 10 \end{array}$	<p>12. $-6x+8x-4 = -10+12$</p> $\begin{array}{r} 2x-4 = 2 \\ +4 \quad +4 \\ \hline 2x = 6 \\ \frac{2x}{2} = \frac{6}{2} \\ x = 3 \end{array}$	<p>Check</p> $\begin{array}{l} -6x+8x-4 = -10+12 \\ -6 \cdot 3 + 8 \cdot 3 - 4 \stackrel{?}{=} 2 \\ \quad \checkmark \quad \checkmark \quad ? \\ -18 + 24 - 4 \stackrel{?}{=} 2 \\ \quad \checkmark \quad ? \\ 2 = 2 \end{array}$
<p>13. $2x+18 = 5x+6$</p> $\begin{array}{r} -2x \quad -2x \\ \hline 18 = 3x+6 \\ -6 \quad -6 \\ \hline 12 = 3x \\ \frac{12}{3} = \frac{3x}{3} \\ 4 = x \end{array}$	<p>Check</p> $\begin{array}{l} 2x+18 = 5x+6 \\ 2 \cdot 4 + 18 \stackrel{?}{=} 5 \cdot 4 + 6 \\ \quad \checkmark \quad ? \\ 8 + 18 \stackrel{?}{=} 20 + 6 \\ 26 = 26 \end{array}$	<p>14. $-x+3 = 11x+27$</p> $\begin{array}{r} +x \quad +x \\ \hline 3 = 12x+27 \\ -27 \quad -27 \\ \hline -24 = 12x \\ \frac{-24}{12} = \frac{12x}{12} \\ -2 = x \end{array}$	<p>Check</p> $\begin{array}{l} -x+3 = 11x+27 \\ -(-2)+3 \stackrel{?}{=} 11(-2)+27 \\ \quad \checkmark \quad ? \\ 2+3 \stackrel{?}{=} -22+27 \\ 5 = 5 \end{array}$
<p>15. $3-4x = -5x+2$</p> $\begin{array}{r} +5x \quad +5x \\ \hline 3+x = 2 \\ -8 \quad -3 \\ \hline x = -1 \end{array}$	<p>Check</p> $\begin{array}{l} 3-4x = -5x+2 \\ 3-4(-1) \stackrel{?}{=} -5(-1)+2 \\ \quad \checkmark \quad ? \\ 3-(-4) \stackrel{?}{=} 5+2 \\ 7 = 7 \end{array}$	<p>16. $-(x+2) = 4(x-3)$</p> $\begin{array}{r} -x-2 = 4x-12 \\ +x \quad +x \\ \hline -2 = 5x-12 \\ +12 \quad +12 \\ \hline 10 = 5x \\ \frac{10}{5} = \frac{5x}{5} \\ 2 = x \end{array}$	<p>Check</p> $\begin{array}{l} -(x+2) = 4(x-3) \\ -(2+2) \stackrel{?}{=} 4(2-3) \\ \quad \checkmark \quad ? \\ -4 \stackrel{?}{=} 4(-1) \\ -4 = -4 \end{array}$

Inequality: A mathematical statement containing one of the symbols: $<$, $>$, \leq , \geq , or \neq to indicate the relationship between two quantities.

Inequalities

- Get solved and graphed.
- Do not contain equal signs. Instead, they contain inequality symbols.
- * • Have an infinite number of solutions that the variable could be.

Inequality Symbols

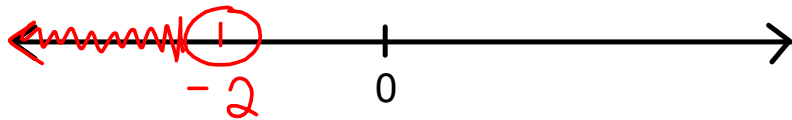
Open Dots	Closed Dots
$<$ is less than	\leq is less than or equal to
$>$ is greater than	\geq is greater than or equal to
\neq is not equal to	

MEMORIZE THIS CHART

Graph the solution to each inequality on the number line.

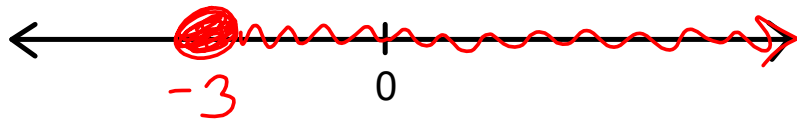
$$x < -2$$

"all real numbers
less than -2"



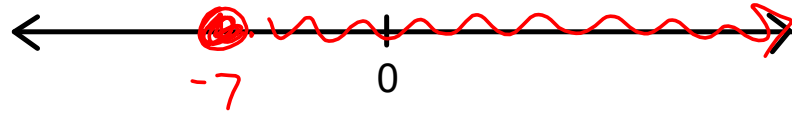
$$x \geq -3$$

"all real numbers
greater than or equal
to -3"



Graph the solution to each inequality on the number line.

$$-7 \leq x$$

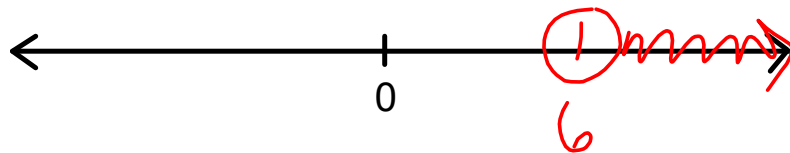


"-7 is less than or equal to all real numbers"

Equivalent Inequality

$$x \geq -7$$

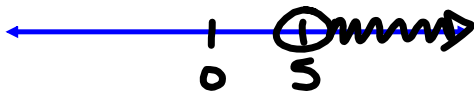
$$6 < x$$



Equivalent Inequality

$$x > 6$$

Write the inequality.



$$x > 5$$

