

Warm Up: Solve for the exact value of the equation shown below. If you get a decimal, convert your answer to a fraction. Check your answer!!!

$$\begin{aligned} -2(1 - 4x) &= 3x + 8 \\ -2 + 8x &= 3x + 8 \\ -8x & \quad -8x \\ \hline -2 &= -5x + 8 \\ \neq 8 & \quad -8 \\ \hline -10 &= -5x \\ \neq -5 & \quad -5 \quad \boxed{x=2} \end{aligned}$$

NICE JOB!

Unit 3: Linear Inequalities & Systems of Equations


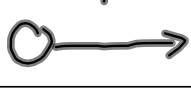




Representing Inequality Solutions


 \neq
INEQUALITY

~~inequality~~— the relation between two expressions that are not equal,
contains infinite solutions

Symbolically:

| | | | | |
|--------------------|---|---|--|---|
| SYMBOL: | $<$ | $>$ | \leq | \geq |
| MEANING: | <u>Less</u> than | Greater than | less than or equal to | greater than or equal to |
| CIRCLE: |  |  |  |  |
| INTERVAL NOTATION: | $(\#, \#)$ | $(\#, \#)$ | $[\#, \#]$ | $[\#, \#]$ |

0~100




> Greater Than
Less Than or Equal To
=

Write in the symbol that makes the problem true.

>, < or =

| | | |
|--|--|--|
| 1. 35 <input type="text" value="<"/> 52 | 2. 40 <input type="text" value="<"/> 74 | 3. 45 <input type="text" value=">"/> 30 |
| 4. 84 <input type="text" value=">"/> 77 | 5. 38 <input type="text" value="<"/> 64 | 6. 51 <input type="text" value=">"/> 39 |
| 7. 43 <input type="text" value="="/> 43 | 8. 79 <input type="text" value=">"/> 28 | 9. 99 <input type="text" value=">"/> 89 |

0~100



> Greater Than
Less Than

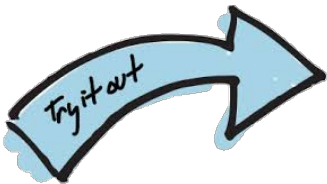
or

Equal To
=

Write in the symbol that makes the problem true.

>, < or =

| | | |
|---|---|---|
| 10. 23 <input type="text" value=">"/> 22 | 11. 66 <input type="text" value="<"/> 77 | 12. 6 <input type="text" value="<"/> 16 |
| 13. 98 <input type="text" value=">"/> 89 | 14. 18 <input type="text" value="="/> 18 | 15. 30 <input type="text" value="<"/> 49 |

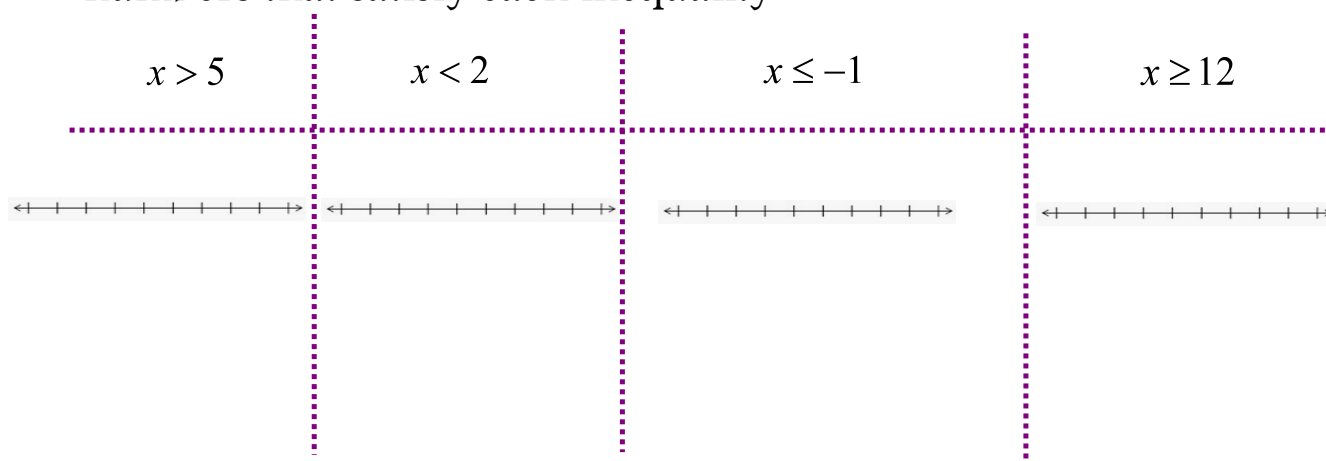


| INEQUALITY | |
|----------------------------|-------------------------------|
| Less Than < | Greater Than > |
| Less Than or Equal To ≤ | Greater Than or Equal To ≥ |



| Solution. | Translation | Number-Line. | Interval Notation. |
|-------------|-------------------------------|--------------|---|
| $x < 4$ | X is less than 4 | | $(-\infty, 4)$ |
| $x \geq 17$ | X greater than or equal to 17 | | $(-\infty, \infty)$ |
| $-3 < x$ | -3 is less than X | | |
| $-4 \geq x$ | -4 is greater or equal to X | | |
| $x \leq 3$ | X is less than or equal to 3 | | |
| $x > 14$ | X is greater than 14 | | |
| $2 > x$ | 2 is greater than X | | |
| $6 \leq x$ | 6 is less than or equal to X | | |
| $x \leq -5$ | X is less than or equal to -5 | | |

Plot the inequalities on a number line. Then, list the first three numbers that satisfy each inequality.



Tear off and complete the exit ticket at the end
of the packet!!!



Name: _____

Score: ____/20



EXIT TICKET


(Graphing Inequalities on Number Lines)

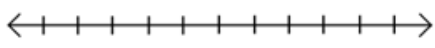
*tear this page off and

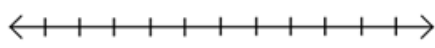
turn it in before you

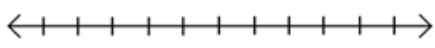
leave class today*

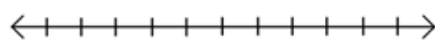
a) Graph the given inequality on the number line.

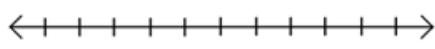
1. $x > 5$  A number line with 11 tick marks. An open circle is drawn at the 6th tick mark from the left. A blue arrow points to the right from this circle. A blue squiggle is drawn below the circle.

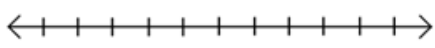
2. $a \leq 3$  A number line with 11 tick marks.

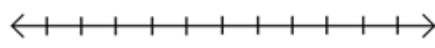
3. $z > -4$  A number line with 11 tick marks.

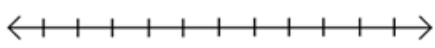
4. $b \geq 12$  A number line with 11 tick marks.

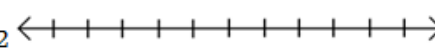
5. $w < 17$  A number line with 11 tick marks.

6. $r \leq -6$  A number line with 11 tick marks.

7. $t > -1$  A number line with 11 tick marks.

8. $x < -5$  A number line with 11 tick marks.

9. $x \geq 0$  A number line with 11 tick marks.

10. $x > -2$  A number line with 11 tick marks.