Inequalities

Writing and Graphing Inequalities Review

Comparing

Complete the statement using < or >.

1) $-\frac{2}{3} \square \frac{3}{8}$

2) $-\frac{1}{2} \square -\frac{7}{8}$

3) $-\frac{1}{5} \square \frac{1}{10}$

4) $-1.4 \square 1.2$

5) $-2.2 \square -4.6$

6) $-1.9 \square -1.1$

Inequalities

An inequality is a mathematical sentence that compares expressions.

To write an inequality, look for the following phrases to determine where to place the inequality symbol.

Inequality Symbols				
Symbol	<	>	≤	≥
Key Phrases	• is less than • is fewer than	• is greater than • is more than	• is less than or equal to • is at most • is no more than	• is greater than or equal to • is at least • is no less than

Writing Inequalities

Write the following as an inequality.

1) A number q plus a number is great than or equal to -7.9.

2) The product of a number m and 8 is at most -40.

3) The quotient of a number d and -7 is at least -10.

4) The difference of a number n and 1.5 is fewer than 45.

5) The sum of a number a and 7.8 is no more than 46.8.

6) 17 less than a number x is no less than 56.

Checking solutions

Tell whether -2 is a solution of each inequality. Show work.

a) $x - 5 \geq -6$

b) $-5.5x < 14$

Checking solutions

Tell whether -5 is a solution of each inequality. Show work.

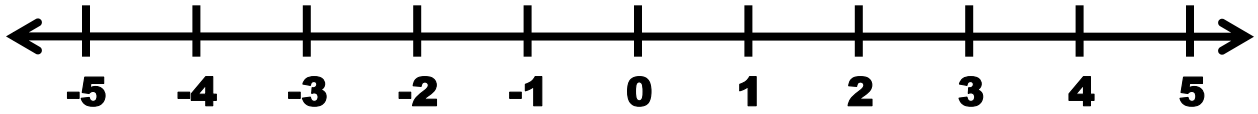
c) $x + 12 > 7$

d) $\frac{x}{2.5} \geq -3$

Practice

$<$ *or* $>$ - Empty Dots

$\leq$ *or* $\geq$ - Full Dots

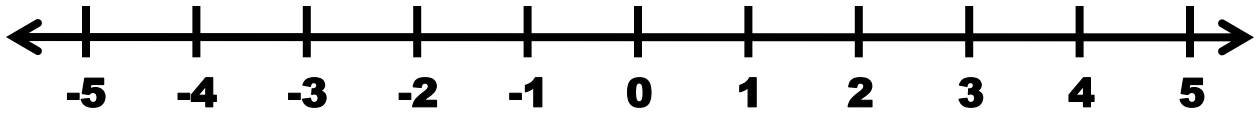


Inequality Symbols

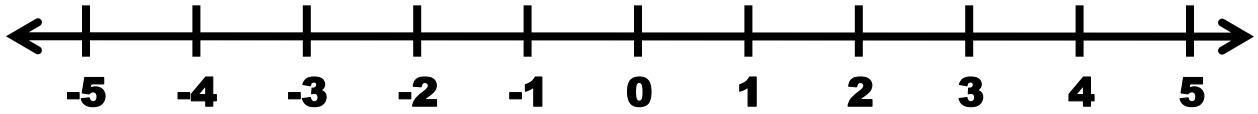
$<$ **"Less than"** $\leq$ **"Less than or equal to"**

$>$ **"Greater than"** $\geq$ **"Greater than or equal to"**

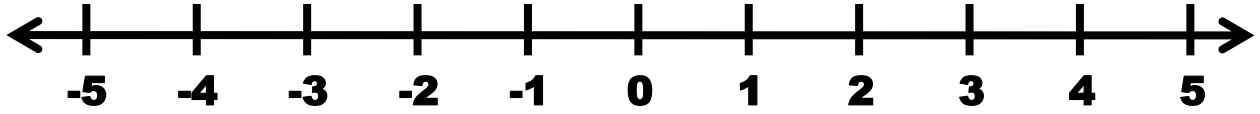
a) $x > -1$



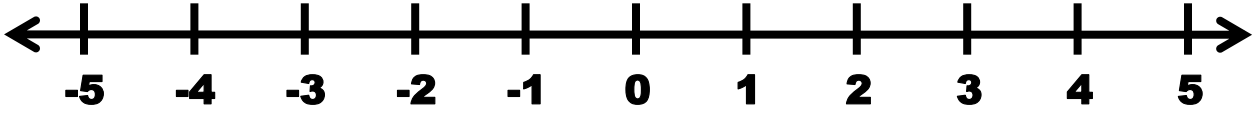
b) $x < -1$



c) $x \geq 2$



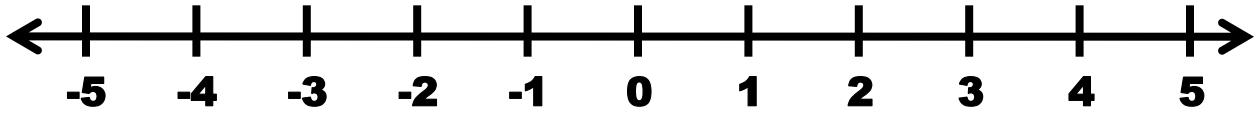
d) $x \leq 2$



Practice

$< or >$ - Empty Dots

$\leq or \geq$ - Full Dots

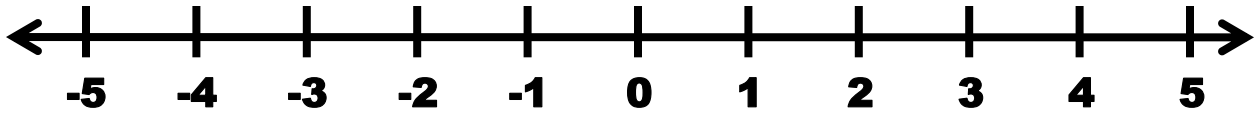


Inequality Symbols

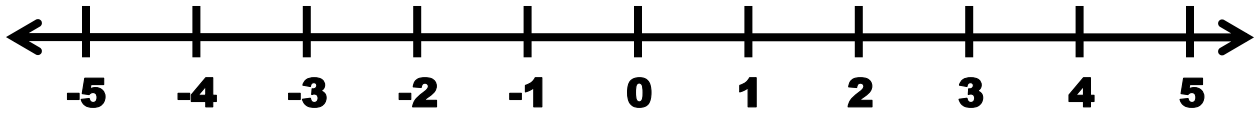
$<$ "Less than" $\leq$ "Less than or equal to"

$>$ "Greater than" $\geq$ "Greater than or equal to"

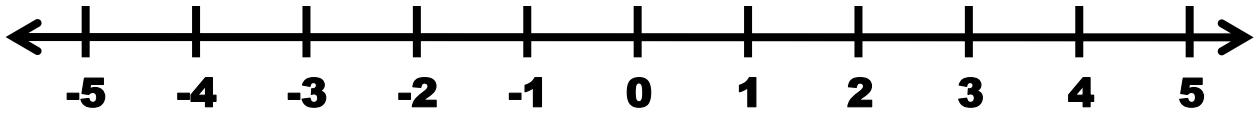
e) $z \geq 4$



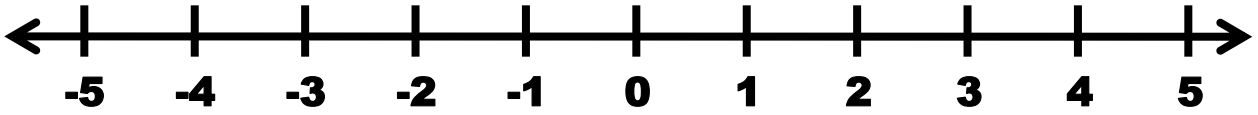
f) $t < -\frac{1}{2}$



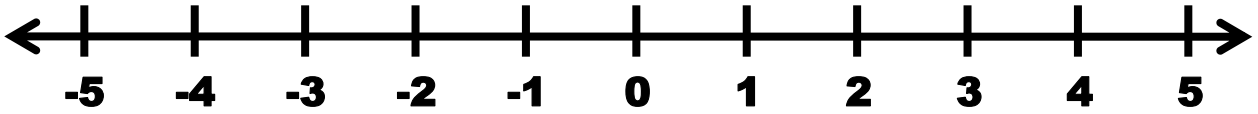
g) $-2 < x$



h) $3 \geq x$

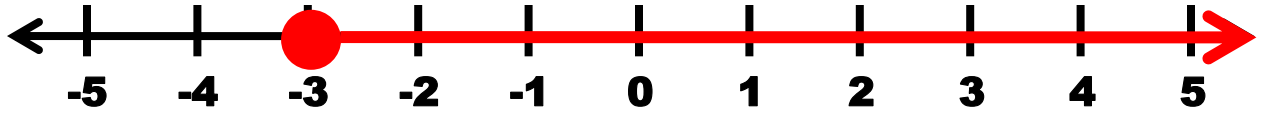


i) $-1\frac{1}{2} < x$

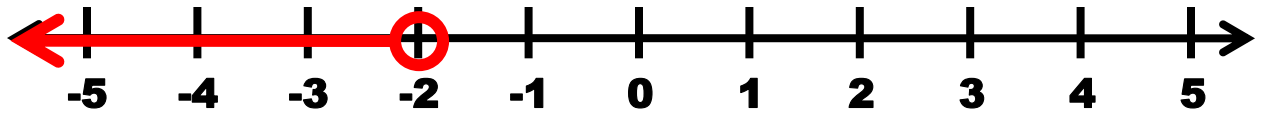


Write the inequality shown in each graph

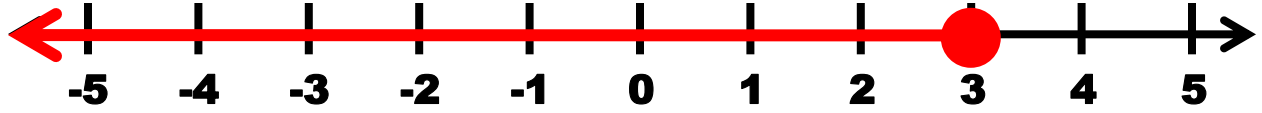
$j)$



$k)$



$l)$

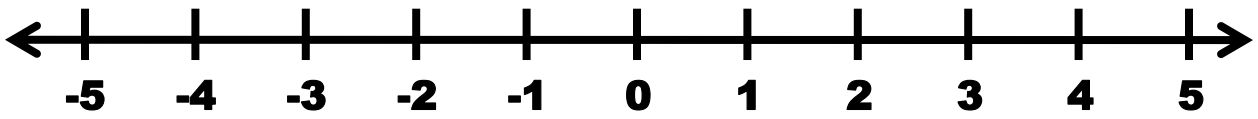


Solving Inequalities

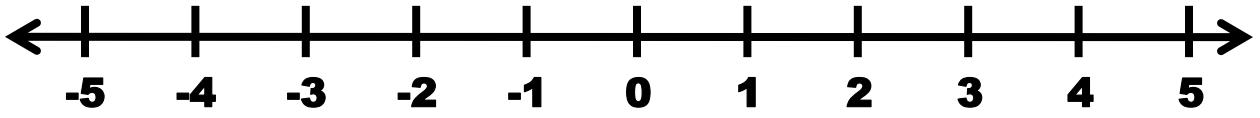
Solving inequalities is just like solving regular equations…

Solve and graph the following:

1) $t - 5 < -2$



2) $r - 8 \geq -6$

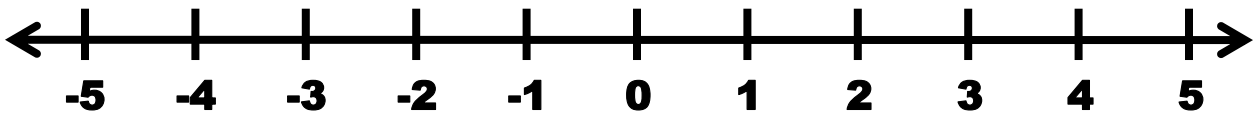


Solving Inequalities

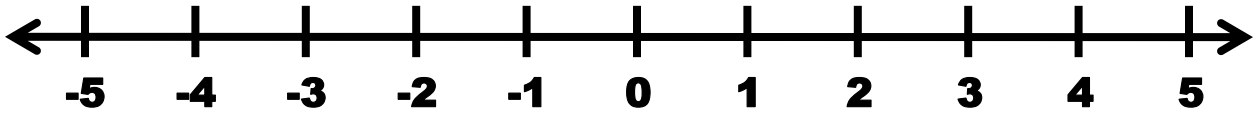
Solving inequalities is just like solving regular equations…

Solve and graph the following:

3) $y + 4 > 1$



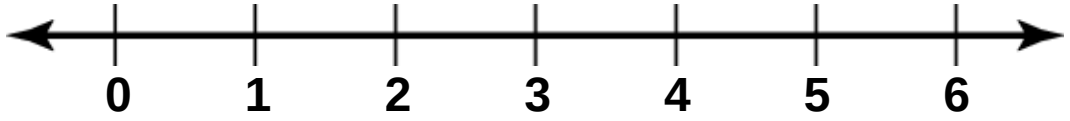
4) $18 \geq w - (-16)$



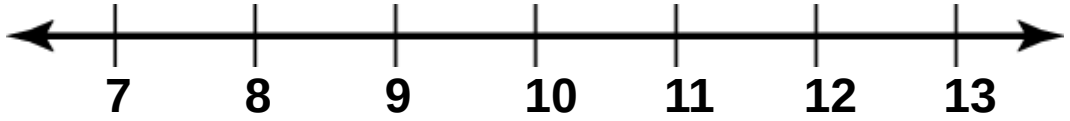
Practice

Solve and graph the following:

5) $5x > 15$



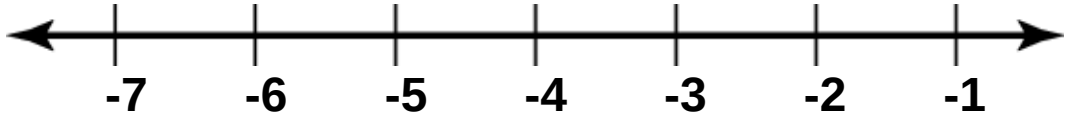
6) $\frac{n}{-6} \leq 2$



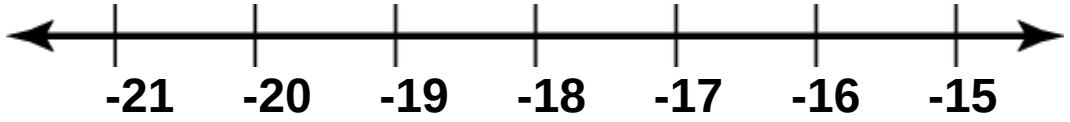
Practice

Solve and graph the following:

7) $-36 \leq 9k$



8) $-9 > \frac{n}{2}$

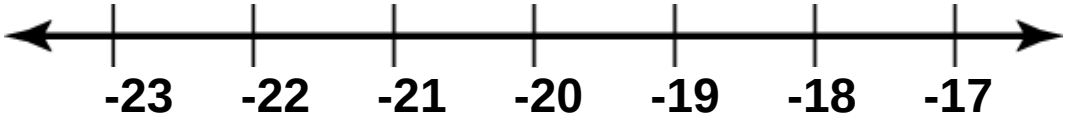


Practice

Solve and graph the following:

9) $\frac{d}{3} \geq 1.6$

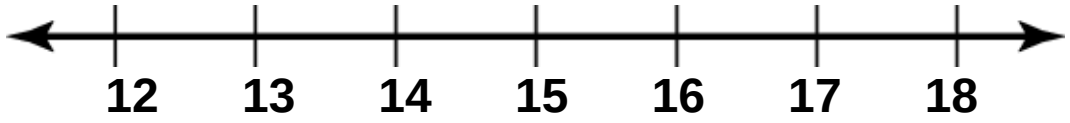
10) $-26 > 1.3h$



Practice

Solve and graph the following:

11) $\frac{1}{3}x \leq 5$



Word Problems

Write the word sentence as an inequality. Then solve the inequality.

12) Five times a number is less than -25.

13) The quotient of a number and -6 at least -3.