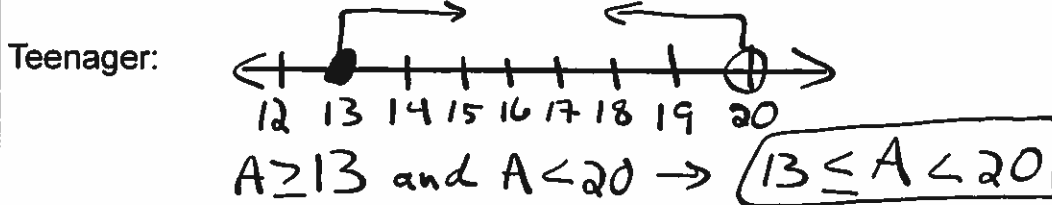


What does it mean to solve?

Find all values that make a sentence true.

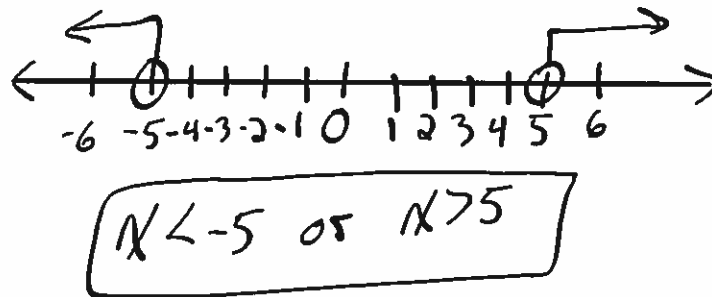
Compound Inequalities

"and" - Solutions must satisfy both of the inequalities.



"or" - Solutions must satisfy at least one of the inequalities.

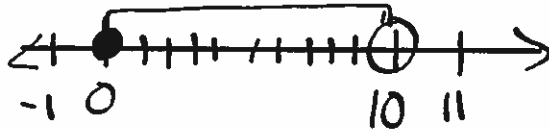
Numbers that are more than 5 units away from zero.



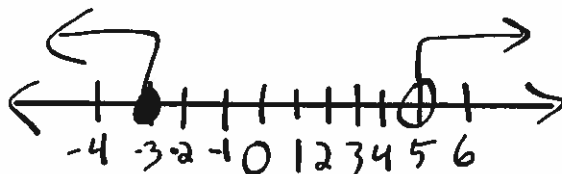
Solve each compound inequality. Graph the solution and write as a single inequality if possible.

Ex 1: $x \geq 0$ and $x < 10$

$0 \leq x < 10$

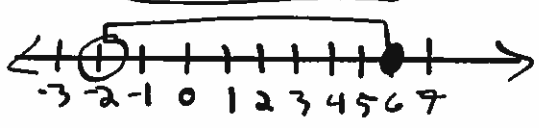


Ex 2: $x \leq -3$ or $x > 5$

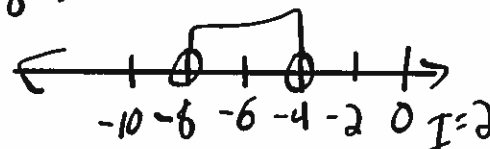


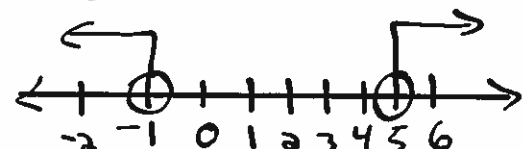
Solutions	Not Solutions
4, 5	11
0	-1
	10
7	0
-3, 4, 7	-1/3

Solve each compound inequality. Graph the solution and write as a single inequality if possible.

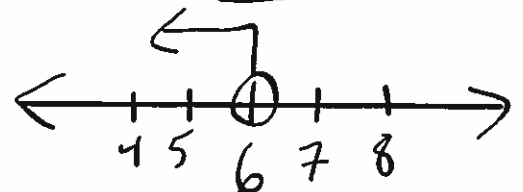
Ex 3: $-9 < 6x + 3 \leq 39$
 $\begin{matrix} +(-3) & +(-3) & +(-3) \\ -12 & < 6x & \leq 36 \\ \hline -2 & < x & \leq 6 \end{matrix}$


Solutions	Not Solutions
0	-2
1	-3
6	56
$2\frac{3}{4}$	6.005
-6	-10
-7	10
$-5\frac{1}{2}$	9300
	0

Ex 4: $17 < 5 - 3x < 29$
 $\begin{matrix} -5 & -5 & -5 \\ 12 & < -3x & < 24 \\ \hline -4 & > x & > -8 \end{matrix}$
 $-8 < x < -4$


Ex 5: $8 + 2x < 6$ or $3x - 2 > 13$
 $2x < -2$ or $3x > 15$
 $x < -1$ or $x > 5$


Solutions	Not Solutions
6	0
-4	1.01
4	7
2	$9\frac{3}{4}$
	6

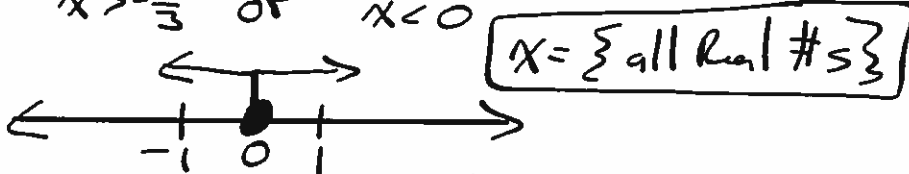
Ex 6: $3x - 1 < 5$ or $-2x + 5 > -7$
 $3x < 6$ or $-2x > -12$ * \div by neg!
 $x < 2$ or $x < 6$
 $x < 2$


Ex 7: $7 > 5 - 3x$ or $3x + 5 > 8x + 5$

* $2 > -3x$
 $-\frac{2}{3} < x$
 $x > -\frac{2}{3}$

$5 > 5x + 5$
 $0 > 5x$
 $0 > x$
 $x < 0$

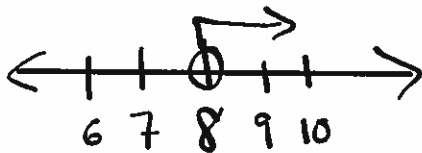
Solutions	Not Solutions
$-\frac{1}{3}, -1, 0$?



Ex 8: $x + 5 > 8$ and $x - 3 > 5$

$x > 3$ and $x > 8$

$x > 8$



Ex 9: $3 < -8 + x$ and $5 - 3x > -25$

$11 < x$ $-3x > -30$

$x > 11$ and $x < 10$

No Real Solution

Assignment #29

p. 384-385 # 1-26, 33-36