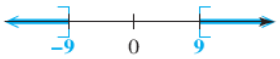
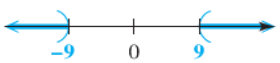
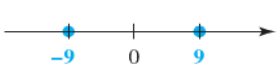
L.6 In-class Practice Math 085

1. Match each absolute value equation or inequality in Column I with the graph of its solution set in Column II.

I	II
$\|x\| = 9$	A. 
$\|x\| > 9$	B. 
$\|x\| \geq 9$	C. 
$\|x\| < 9$	D. 
$\|x\| \leq 9$	E. 

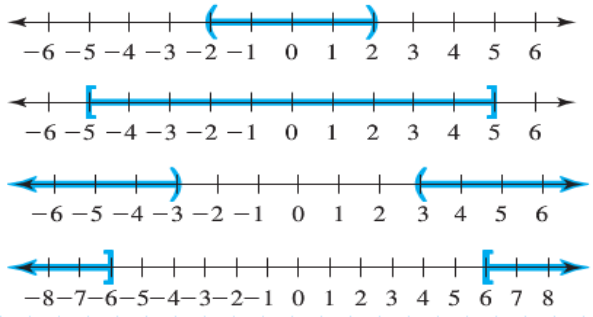
2. How many solutions will $|ax + b| = k$ have for each situation?
   a) $k = 0$ b) $k > 0$ c) $k < 0$

3. Explain when to use *and* and when to use *or* if you are solving an absolute value equation or inequality of the form $|ax + b| = k$, $|ax + b| < k$, or $|ax + b| > k$, where k is a positive number.

4. Solve each absolute value equation.
   a) $|2x - 9| = 18$ b) $\left|1 + \frac{3}{4}x\right| = 7$ c) $|x + 5| - 2 = 12$
   d) $3 - \frac{1}{2}\left|\frac{1}{2}x - 4\right| = 2$ e) $|3x - 1| = |3x + 9|$ f) $\left|x - \frac{1}{2}\right| = \left|\frac{1}{2}x - 2\right|$
   g) $|7x + 4| = 0$ h) $|12t - 3| = -8$ i) $5 - \frac{|3-2x|}{3} = 4$

5. Solve each absolute value inequality and graph the solution set.
   b) $|4x + 1| < 21$ b) $|-5x + 3| > 12$ c) $|5x + 1| \geq 21$
   d) $|-2x - 4| \geq 5$ e) $|x - 2| - 3 \leq 4$ f) $|x - 4| + 5 \geq 4$
   g) $|10x + 7| + 3 < 1$ h) $16 \leq |2x - 3| + 9$ i) $7 - |3 - 2x| \geq 5$
   j) $2|y - 3| - 7 \leq -1$

6. Write an absolute value inequality whose solution set is shown by the graph.



7. Find an equivalent absolute value inequality.
   a) $-5 \leq y \leq 5$ b) $x \leq -6$ *or* $x \geq 6$

8. According to a Fox News survey, the presidential approval rating is 39% plus or minus 5 percentage points.
   a) In what range is the percentage of people who approve of the president?
   b) Let x represent the actual percentage of people who approve of the president. Write an absolute value inequality for x.