1. (a) Find two numbers which are 2 units away from zero.

   (b) Find both solutions to the absolute value equation $|x| = 2$.

   (c) Find two numbers which are three units away from 7.

   (d) Find the solutions to the absolute value equation $|x - 7| = 3$

   (e) Write an absolute value equation that has solutions which are 4 units away from 2.

2. Which values of x, if any, make the following statement true

   (a) $|x| = 3$

   (b) $|x| = -1$

   (c) $|x| = -x$

3. Solve

   (a) $19 = |3x| - 2$

   (b) $|2x - 2| = 10$

   (c) $|3x - 1| = 5$

4. Consider the following absolute values inequalities and match them with the description of their solution sets. It will help to graph solutions of the absolute value inequalities.

   - $|x| \leq 3$

   - $|x| > 3$

   - $|x + 1| > 3$

   - $|x - 1| < 3$

   - All numbers which are more than three units away from zero.

   - All numbers which are less than three units away from 1

   - All numbers that are no more than three units away from zero.

   - All numbers that are more than three units away from -1

5. Using what you learned in the last problem do the following:

   (a) Write an absolute value inequality whose solutions are all numbers which are no more than 7 units away from 2.

   (b) Write a full sentence which describes the solutions to $|x + 3| > 1$

6. Using what you learned from last two problems, give an absolute value equation with the following graphs as the solutions.

(a)

(b)

(c)

(d)
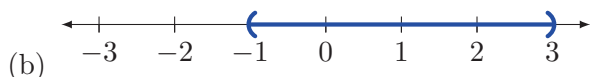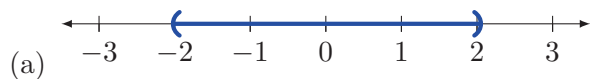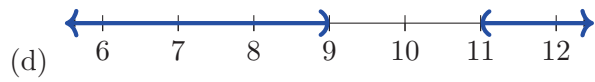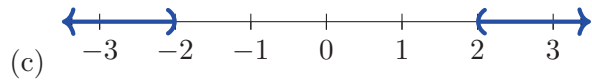
7. Solve, write your solutions in interval notation and as a graph.

(a) $|x| - 5 > 3$

(b) $|x - 2| < 5$

(c) $2 \cdot |-x + 2| \geq 7$

(d) $\left|\dfrac{1}{2}x - 2\right| \leq 3$

(e) $\left|\dfrac{1}{7}x - 9\right| < 1$