Exeter Math 1 problems

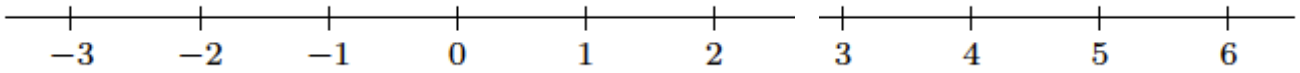
As shown on the number line below, k represents an unknown number between 2 and 3. Plot each of the following, extending the line if necessary:

(a) $k + 3$ (b) $k - 2$ (c) $-k$ (d) $6 - k$


Mark a random number x between 1 and 2 (at a spot that only you will think of) on a number line.

Plot the opposite of each of the following:

(a) x (b) x + 5 (c) x − 4 (d) 6 − x




The equation $|x - 7| = 2$ is a translation of "the distance from x to 7 is 2."

(**a**) Translate $|x - 7| \leq 2$ into English, and graph its solutions on a number line.

(**b**) Convert "the distance from $-5$ to x is at most 3" into symbolic form, and solve it.

Fill in the blanks:

(**a**) The inequality $|x - 1.96| < 1.04$ is equivalent to "x is between ____ and ____."

(**b**) The inequality $|x - 2.45| \geq 4.5$ is equivalent to "x is not between ____ and ____."

Rearrange the eight words "between", "4", "the", "17", "is", "and", "x", and "distance" to form a sentence that is equivalent to the equation $|x-17| = 4$. By working with a number line, find the values of x that fit the equation.

Jay thinks that the inequality $k < 3$ implies the inequality $k^2 < 9$, but Val thinks otherwise. Who is right, and why?