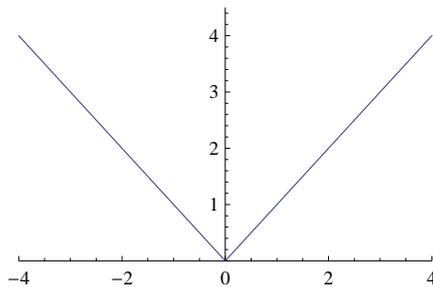


## Questions on Absolute Value, or Modulus.

Recall that if  $x \in \mathbb{R}$ , then  $|x|$ , is the **absolute size** of  $x$ , also called the **modulus**. It can also be written as

$$x = \begin{cases} x & \text{if } x \geq 0, \\ -x & \text{if } x < 0. \end{cases}$$

From this it is easy to see that the graph is



But if this is so simple, what are the graphs of the following?

1.  $2|2 + x|$ ,

2.  $|2 + x| - |x - 2|$ ,

3.  $2|x + 3| + 2|x - 3| - 4|x|$ .

4.

$$\frac{x^3}{|x|}, \quad x \neq 0,$$

5.

$$\frac{x^2}{|x|}, \quad x \neq 0,$$

6.

$$\frac{x^2 - 1}{|x - 1|}, \quad x \neq 1,$$

7.

$$\frac{x^3 - 1}{|x - 1|}, \quad x \neq 1.$$