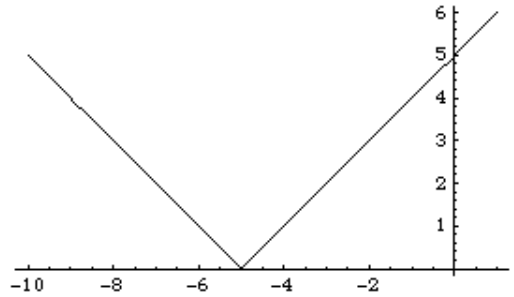Write each function as a piecewise function and simplify, as in the sample. Graph the function. In #1-3, check your graph by verifying that it is the correct transformation (shift, reflection, etc.) of the function $f(x) = |x|$.
    Please note that there are problems on the back.

SAMPLE. $f(x) = |x + 5|$.

$$f(x) = |x + 5| = \begin{cases} x + 5 & \text{if } x + 5 \geq 0 \\ -(x + 5) & \text{if } x + 5 < 0 \end{cases}$$

$$= \begin{cases} x + 5 & \text{if } x \geq -5 \\ -x - 5 & \text{if } x < -5 \end{cases}$$

Check: The transformation $|x| \rightarrow |x + 5|$ is a shift 5 units to the left. Sure enough, the graph looks like the graph of $|x|$ shifted to the left 5 units.

1. $f(x) = |x - 2|$

2. $f(x) = |x| + 3$

over for more fun!

3. $f(x) = |2x|$

4. $f(x) = |2 - 3x|$

5. $f(x) = |2x + 1| - 4$