QUIZ 3 - MATH 112 YOUR NAME:

Read each problem **very carefully** before starting to solve it. Each problem is worth 5 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. Draw carefully the graphs of the functions $g(x) = -x^2 - 4x$ and h(x) = 2x (each on a different figure) side by side in the space provided below. For the parabola indicate clearly the coordinates of the vertex and the intercepts.

2. Draw the graph of the piece-wise defined function $f(x) = \begin{cases} -x^2 - 4x, & \text{if } x < -1 \\ 2x, & \text{if } x \ge -1 \end{cases}$.

3. Referring to the graph of Problem 2, find the following:

$$f(-1) =$$
$$\lim_{x \to -1^{-}} f(x) =$$
$$\lim_{x \to -1^{+}} f(x) =$$
$$\lim_{x \to -1} f(x) =$$