Homework Set 15

Calculating Limits using the Chart Method
(sections 1.3 & 1.6)

Calculate each of the following limits, $\lim_{x \to a} f(x)$, by picking values for x which approach a and computing the associated $f(x)$ values. If values for x are given, use them. If no values for x are given, choose your own numbers. Then use the created chart to find the limit of the function.

1.

$$\lim_{x \to 0} \frac{\sin x}{2x + \tan x} \qquad use \quad x = \pm 1, \pm 0.5, \pm 0.1, \pm 0.01, \pm 0.001$$

2.

$$\lim_{x \to -6} \frac{2x + 12}{|x + 6|}$$

3.

$$\lim_{x \to 1^-} \frac{1}{x^3 - 1}$$

4.

$$\lim_{x \to 0} \left(\frac{1}{x} - \frac{1}{|x|} \right)$$

5.

$$\lim_{x \to \infty} \frac{x^2}{2^x}$$