Purpose: In this problem set, we will draw connections between limits and properties of functions that we already know.

Directions: For each of the properties of functions below, write down how you can describe that property using limits. Draw pictures for each of your solutions.

1. The function $f(x)$ has a vertical asymptote at $x = 2$. (Find three different solutions).

2. The function $g(x)$ has a hole at $(-1, 3)$.

3. The function $p(t)$ has a horizontal asymptote at $y = -4$.

4. The function $h(s)$ is continuous at $s = -2$.

5. As x increases, the function $\ell(x)$ is constant at -1 but at $x = 3$, $\ell(x)$ jumps to 4 and doesn't change again.

6. The function $k(v)$ is continuous everywhere.