Worksheet: Continuity

1. (**# 57 in 2.4**) Graph this function and find discontinuities (if any). For each discontinuity, precisely explain why it is discontinuous.

$$f(x) = \begin{cases} \frac{1}{2}x + 1, & x \le 2, \\ 3 - x, & x > 2 \end{cases}$$

2. (**# 73 in 2.4**) Find the constants a and b so that the function is continuous on the entire real line, and graph that case where it is continuous:

$$g(x) = \begin{cases} 2, & x \le -1, \\ ax + b, & -1 < x < 3, \\ -2, & x \ge 3 \end{cases}$$

3. (similar to **# 87 in 2.4**) Graph this function. Describe the intervals on which it is continuous:

$$h(x) = \cot \frac{\pi x}{3}$$