Name:_____ Score:_____

Instructions: You must show supporting work to receive full and partial credits. No text book, notes, formula sheets allowed.

1(5pts) Find the limit $\displaystyle\lim_{x \to 2} \frac{x^2 - x - 2}{2 - x}$

2(5pts) A function is given below

$$g(x) = \begin{cases} x + 1 & \text{if } x < 2 \\ 3 - x & \text{if } 2 \le x \le 3 \\ x^2 - 4 & \text{if } x > 3 \end{cases}$$

(a) Graph the function.

(b) Find all discontinuities of the function.

(c) For the largest discontinuity point, find the left and right side limits.

END