Question 1. Where are each of the following functions discontinuous? Justify your answer. At each of these numbers (of discontinuity), determine if f continuous from the right, from the left, or neither.
(2 points each)

(a) $f(x) = \dfrac{x^2 - x - 2}{x + 1}$

(b) $f(x) = \begin{cases} \dfrac{x^2 - 9}{x + 3} & \text{if } x \neq -3 \\ 6 & \text{if } x = -3 \end{cases}$

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

(**extra work space**)

Question 2. Find the values of A and B so that the following function is continuous for all values of x. *(4 points)*

$$f(x) = \begin{cases} Ax + \dfrac{B}{2} & \text{if } \ x \leq 1 \\ x^2 - 4Ax + \dfrac{5}{2}B & \text{if } \ 1 < x \leq 3 \\ 2 & \text{if } \ x > 3 \end{cases}$$