Last Name	First Name	Date

1 (8 points). Is the given function continuous at the given point/interval? If not, explain why.

(a) $f(x) = \dfrac{1}{|x| + 1}$ at $x = -1$

(b) ceiling(x) on the interval $(1, 2]$, where the value of ceiling is the smallest integer $\geq x$

(c) $\tan(x)$ on the interval $[-\pi/2, \pi/2]$

(d) $r(x)$ on $\mathbb{R}$, where $r(x) = \begin{cases} \dfrac{x^2 + x - 2}{x + 2} & \text{if } x \neq -2 \\ -1 & \text{if } x = -2 \end{cases}$

2 (2 points). Find a continuous extension $G(x)$ of $g(x) = \dfrac{x^2 - 4}{2x - 4}$

3 (2 points). Find the set of points x on which the function $f(x)$ is continuous:

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