1. Use limit to compute the derivative $f'(1)$ where $f(x) = \frac{1}{3x+2}$.

2. Define $f(x)$ at $x = -2$ in a way that makes $f(x)$ continuous for all $x$.

$$f(x) = \frac{x^2 - x - 6}{x+2}, x \neq -2$$