(1)[5 points] Let $f(x) = x + \dfrac{1}{x}$ and $g(x) = \dfrac{x+1}{x+2}$. Find and simplify $f \circ g$ and state the domain.

(2)[5 points] Evaluate

$$\lim_{x \to 2} \frac{x^2 + x - 6}{x - 2}$$

(3)[5 points] Evaluate

$$\lim_{x \to 7} \frac{\sqrt{x+2} - 3}{x - 7}$$