

(1)[5 points] Let $f(x) = \frac{1}{x}$. Evaluate and simplify

$$\frac{f(x) - f(a)}{x - a}.$$

(2)[5 points] Find the domain of

$$f(x) = \frac{x}{3x - 1}$$

(3)[5 points] Sketch the graph of

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

Be sure to label and indicate the scale on the x and y axes.