

(1) [5] Let  $f(x) = 1/x$ . Evaluate and simplify the difference quotient

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

(2) [5] Find an expression for the function whose graph is the bottom half of the parabola

$$x + (y - 1)^2 = 0$$

(3) [5] An open rectangular box of volume  $2 \text{ m}^3$  has a square base of side length  $x$ . Express the surface area  $S$  of the box as a function of  $x$ .