

1. (8 points) Consider the functions f and g defined below. Assume a is a nonzero constant.

$$f(x) = \frac{(x-a)^2}{\sqrt{x}}, \quad g(x) = x \cos(ax),$$

- (a) (4 pts.) Find the family of antiderivatives of $f(x)$. Show step-by-step work.

- (b) (4 pts.) Find the family of antiderivatives of $g(x)$. Show step-by-step work.