

MA125-6A Quiz 2

Name: Key

Exercise 1. (5 points) Find the derivative of the function

$$f(x) = x^4.$$

$$\begin{aligned} \frac{d}{dx} f(x) &= \frac{d}{dx} (x^4) \\ &= 4x^3 \quad (\text{Power Rule}) \end{aligned}$$

Exercise 2. (5 points) Find the derivative of the function

$$g(x) = x^2 - 3x + 4.$$

$$\begin{aligned} \frac{d}{dx} (g(x)) &= \frac{d}{dx} (x^2 - 3x + 4) \\ &= \frac{d}{dx} (x^2) - \frac{d}{dx} (3x) + \frac{d}{dx} (4) \\ &= \frac{d}{dx} (x^2) - 3 \frac{d}{dx} (x) + \frac{d}{dx} (4) \\ &= 2x - 3(1) + 0 \\ &= 2x - 3 \end{aligned}$$