

# Math 2143 - Brief Calculus with Applications

Homework #7 - 2008.02.26

Due Date - 2008.03.06

Name: \_\_\_\_\_

Compute the following derivatives.

1.

$$\frac{d}{dx} \left( 4x - 3x^2 + \frac{1}{2x^3} + \sqrt[4]{x} \right)$$

2.

$$\frac{d}{dz} \frac{2z + 43z^3}{2z - 43z^3}$$

3.

$$\frac{d}{dy} \left( \left( 2y + \frac{4y}{2y+1} \right) (7y - \sqrt{y} - 1)^2 \right)$$

4.

$$\frac{d}{dt} \left( \frac{3t + (4t^2 + 5)(6t^3 - 1)}{7t + 8t^3 - t^{\frac{1}{72}}} \right)$$

5.

$$\frac{d}{ds} \left( s^3 + \frac{1+s}{1+s^{\frac{8}{21}}} \right)$$

6.

$$\frac{d}{dx} \left( \left( 2 - \frac{1}{x} + \sqrt{x} \right) \left( \frac{x-1}{x^2+2x-2} + 3x-1 \right) \left( 7x^3 - 12x^2 + 3x - x^{-\frac{12}{11}} \right) \right)$$

7.

$$\frac{d}{da} \left( \frac{a^2(b-1)c^3}{a-b^2+c^3} \right)$$

8.

$$\frac{d}{db} \left( \frac{a^2(b-1)c^3}{a-b^2+c^3} \right)$$

9.

$$\frac{d}{dc} \left( \frac{a^2(b-1)c^3}{a-b^2+c^3} \right)$$

10.

$$\frac{d}{dz} \left( \left( x^2 - 3x + \frac{2}{x} \right) \left( 4x - 7x^3 + \frac{3}{x^\pi} + \frac{1}{x-1} \right) \left( 1 - \frac{x-1}{x+1} \right) \left( \frac{2x^3 + 4x^2 - 1}{7x^2 - 2x} - 2 \right) \right)$$