Student ID:

Student Name:

Serial Number:

Math 101, Section 32
Fall 2015, Term 151

Quiz 5
Version A

Instructions: Show Your Work!

1. (4 pts) A particle moves along the curve $y = \sqrt{1+x^3}$. As it reaches the point $(2, 3)$, the y-coordinate is increasing at a rate of 4 cm/s. At this instant, what is the rate at which the x-coordinate is changing?

2. (3 pts) The radius of a circle is measured to be 3 m with a possible error of 0.03 m. By using differentials, what is the relative error in the area?

3. (3 pts) Find

$$\frac{d}{dx}\left(\coth^{-1}(\sin x^2)\right).$$

Simplify your answer.

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