Math 1823-004 Quiz 8 Spring 2016

Name: Solution

Student Number:

Problem 1

Differentiate the following functions.

(a) $y = \sqrt[3]{1+4x}$.

$= (1+4x)^{\frac{1}{3}}$

$y' = \frac{1}{3}(1+4x)^{-\frac{2}{3}} \cdot (1+4x)'$

$= \frac{1}{3}(1+4x)^{-\frac{2}{3}} \cdot (4)$

(b) $f(\theta) = \cos(\theta^2)$.

$f'(\theta) = -\sin(\theta^2) \cdot \frac{d}{d\theta}(\theta^2)$

$= -\sin(\theta^2) \cdot (2\theta)$

(c) $y = \sin(\sin x)$.

$y' = \cos(\sin x) \cdot (\sin x)'$

$= \cos(\sin x) \cdot \cos x$

(d) $y = \frac{1}{2x+1}$.

$= (2x+1)^{-1}$

$y' = (-1)(2x+1)^{-2} \cdot (2x+1)'$

$= -(2x+1)^{-2}(2)$