MATH 112Z: CALCULUS II, FALL 2019

Homework 1: due Monday, Sep. 9

- Section 1.5: 24, 26, 57, 69, 75.
- Section 7.1: 9, 16, 17, 22, 29, 42, 51, 55.

Additional problems:

(1) Use implicit differentiation and properties of inverse functions to prove:

$$\frac{d}{dx}\left(\cos^{-1} x\right) = \frac{-1}{\sqrt{1-x^2}}.$$

(2) Differentiate the following:

(a) $g(z) = \cos^{-1}(e^z)$

(b) $f(x) = \ln\left(\dfrac{3x+1}{\sqrt{x-2}}\right)$

(c) $y = \cos\left(\dfrac{1-e^{2x}}{1+e^{2x}}\right)$