Homework 8
Due : 10/25/17

Exercise 1

Give the domain, the domain of differentiablity and the derivative of the following functions :

1) $f(x) = \sqrt{\frac{2x-7}{5x+2}}$

2) $g(x) = \sin^{-1}\left(x^{3/2}\right)$

3) $h(x) = \ln\left(\frac{2\sin(x)}{3x+1}\right)$

Exercise 2

Find the global maximum and minimum of the following functions :

1. $f_1(x) = 1 - |x-1|$ on $[0,4]$
2. $f_2(x) = x^3$ on $[-1,3]$
3. $f_3(x) = \sqrt{1-x^2}$ on $[-1,1]$
4. $f_4(x) = \begin{cases} -2x & \text{if } x \leq 0 \\ x(1-x) & \text{if } x > 0 \end{cases}$ on $[-1,1]$
5. $f_5(x) = \cos^{-1}(x)$ on $[-1,1]$