CSCI381/CSCI780
Homework 3
Due 05/13/2019 in class

(1) Use the softmax function, convert the following set of scores to probabilities:

7, -2, -5, 4, 0

(2) Log-linear models: Consider the label set Y={cat,dog,hat,cot} with three features

$$f_1(x,y) = \begin{cases} 1 \text{ if x = the and y ends with at} \\ 0 \text{ otherwise} \end{cases}$$

$$f_2(x,y) = \begin{cases} 1 \text{ if x = the and y starts with c} \\ 0 \text{ otherwise} \end{cases}$$

$$f_3(x,y) = \begin{cases} 1 \text{ if x = the and y has second letter o} \\ 0 \text{ otherwise} \end{cases}$$

The weight vector v=<3,1,1>. What is the value of p(dog|the;v)?

(3) Exercise 10.2 (Chapter 10, Jurafsky and Martin)
https://web.stanford.edu/~jurafsky/slp3/10.pdf