HW 6

```python
import tensorflow as tf
import numpy as np
import matplotlib.pyplot as plt
import math
def dzdx(x,y):
    return (x-2)/(25 - (x-2)**2 - (y-3)**2)**0.5
def dzdy(x,y):
    return (y-3)/(25 - (x-2)**2 - (y-3)**2)**0.5
xStart=0.00001
yStart=0.00001
maxLimit = 5000
xStartHistory = np.zeros(maxLimit)
yStartHistory = np.zeros(maxLimit)
learning_rate = 0.01
x_update = 0
y_update = 0
gamma = 0.6
for i in range(maxLimit):
    xStartHistory[i] = xStart
    yStartHistory[i] = yStart
    x_update = (gamma * x_update) + (learning_rate * dzdx(xStart, yStart))
    xStart = xStart - x_update
    y_update = (gamma * y_update) + (learning_rate * dzdy(xStart, yStart))
    yStart = yStart - y_update
    if xStartHistory[i] - xStartHistory[i-1] < 0.000001:
        print(i)
        break
#rerun the last if statement with yStartHistory[i] instead of
xStartHistory[i] to find when function converges with respect to y

Converges with respect to x: 1799 (2275 less epochs than last week)
Converges with respect to y: 1880 (2397 less epochs than last week)
```