CS-6210: HW 2

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1   Chapter 4

4.22   a)

    b) My approximations of 1 were off by 4.50099e-08 in either direction.

    c)

    d)

4.31   a)

    b)

    c)

    d)

2   Chapter 9

9.2   a) The result of the normalization using $\overline{X} = 2.8215$, $\overline{Y} = 2.4224$, and scaling X by 7.1118 and Y by 2.0859 is:

p	q
-1.0000	0.5963
-0.8151	0.6407
-0.6096	0.2867
-0.3397	0.5540
-0.1761	0.4480
0.2006	-0.1704
0.2508	0.0572
0.4053	-0.0117
0.5854	-0.5213
0.6720	-0.8795
0.8265	-1.0000

    b) The α calculated using the normalized table in part a:

$$\alpha = -0.9281$$

    c) Since we have $G(X) = V_1 + V_2 X$ where $G(X)$ is a linear function with slope V_2, it follows that for the analogous function Y,

$$Y = \overline{Y} + m(X - \overline{X})$$

Rearranging Y we group the constants and get:

$$Y = (\overline{Y} - m\overline{X}) + mX$$

Since $V_1 = log(v_1)$, we can solve for v_1 as:

$$V_1 = log(v_1) = \overline{Y} - m\overline{X}$$

$$v_1 = 10^{\overline{Y} - m\overline{X}}$$

d) Arithmatic done, need to plot curve and estimate for T-Rex

9.3 a)

9.5 a)

9.8 a)