8a) $\eta = 0.01 \quad \gamma = 0.9 \quad m_0 = 1 \quad c_0 = -1 \quad v_0^m = 0$

$v_0^c = 0$ expected.

x	y
5551.82208	4983.17184
4983.17184	4888.39680

$$\frac{\partial L}{\partial m} = -\left[\left[y_i^a - [(m_0 + \gamma v_0^m)](x_i^a) - [(c_0 + v_0^c)](x_i^a)\right]\right]$$

$$= -\left[(4983.17184) - (1 + (0.9)(0))(5551.82208) - \right.$$

$$\left.[-1+0]\right]\left[5551.82208\right]$$

$$= -\left[4983.17184 - 5551.82208 + 1\right]\left[5551.82208\right]$$

$$= -\left[-567.65024\right]\left[5551.82208\right]$$

$$= +3151493.14$$

$$\frac{\partial L}{\partial c} = -\left[y_i^a - (m_0 + \gamma v_0^m) x_i^a - [c_0 + \gamma v_0^c]\right]$$

$$= -\left[\begin{matrix}4983.17184 \\ 5551.82208\end{matrix} - (1 + (0.9)(0))(5551.82208) - \right.$$

$$\left.[-1 + (0.9)(0)]\right]$$

$$= -\left[-567.65024\right]$$

$$= 567.65024$$

$\Delta m = -(0.01)(3151493.14)$ $\Delta c = -(0.01)^{*}(567.65024)$

$= -31514.9314$ $= -5.6765024$

$m = m + \Delta m$ $C = c + \Delta C$

$= 1 + (31514.9314)$ $= -1 - 5.6765024$

$= -31513.9314$ $= -6.6765024$

Sample 2

$\frac{\partial L}{\partial m} = -\left[y_i^a - (m_0 + V v_0^m)(x_i^a) - (c_0 + V_0^c)\right](x_i^a)$

$= -\left[4888.39680 - (-31513.9314+0)(4983.17184) - (-6.6765024+0)\right][4983.17184]$

$= -\left[4888.39680 + 6.6765024 + 157039336\right][4983.17184]$

$= -[157044231][4983.17184]$

$= -7.8257839e^{11}$

$\frac{\partial L}{\partial L} = -[y_i^a - (m_0 + V v_0^m)(x_i^a) - [c_0 + V v_0^c]]$

$= -[157044231]$

$\Delta m = -(0.01)(-7.8257839e^{11})$ $\Delta C = -(0.01)(c)$

$= 7.8257839e^{9}$ $= +1570442.31$

$m = 7.8257839e^{9}$ $c = -1 - \Delta C$

$= 1570443.31$