Assignment - 6A

price/sqft	living
221900	1180
538000	2570
180000	770
604000	1.960

1) $\eta = 0.01$, epochs $= 1$, $m = 1$ and $c = 1$, $n = 2$

2) iteration $= 1$, batch$i = 1$

3) $\dfrac{\partial E}{\partial m} = -(0.5)[(221900 - 1*1180+1)* 1150 + (538000 - 1*2570+1)$
$* 2570] = -818254225$

$\dfrac{\partial E}{\partial c} = -0.5(756152) = -378076.$

4) $\Delta m = -(0.1)(-818254225) = 81825422.5$

$\Delta c = 37807.6$

5) $m = 1 + 8182542 2.5 = 8182 5423.546 = 37806.6$

6) batch$i = 1+1 = 2$

Repeat 3: $\dfrac{\partial E}{\partial m} = -(0.5)[(180000 - 8182 5423.5 * 770 - 37806.6)$
$* 770 + (604000 - 81825423.5 * 1960 - 37806.6)$
$* 1960]$

$= 1.55266047e^{14}.$

$\dfrac{\partial E}{\partial c} = -0.5(-1.66679898e^{11}) = 8.33399469e^{10}.$

Repeat 4: $\Delta m = -0.1(1.55266047e^{14}) = -1.55266047e^{13}$
$\Delta c = -8.333.99439e^{9}$

Repeat 5: $m = -1.55265229e^{13}$
$c = -8.33395708e^{9}$