

ua)

x	y
7.6	157
7.1	144

Iteration 1 Sample 1

$$\eta = 0.1 \quad m=1 \quad c=-1 \quad (P_{SPD}, C_{E8}, \mu_{T1}) \quad \Delta = 3$$

$$y_p = mx + c = 6.6$$

$$\epsilon = \frac{1}{2} (y_a - mx - c)^2$$

$$= \frac{1}{2} (157 - 6.6)(7.6) - (-1))^2$$

$$\epsilon = 1130.08 (0.5) (150.4)^2 = 1130.08$$

$$\frac{\partial \epsilon}{\partial m} = -(y_a - mx - c) * x$$

$$= -(157 - 6.6)(7.6)$$

$$= -1143.04 = \partial \mu \cdot \mu_{T1} = 108.211 \approx 11$$

$$\frac{\partial \epsilon}{\partial c} = -(y_a - mx - c)$$

$$= -(157 - 6.6)$$

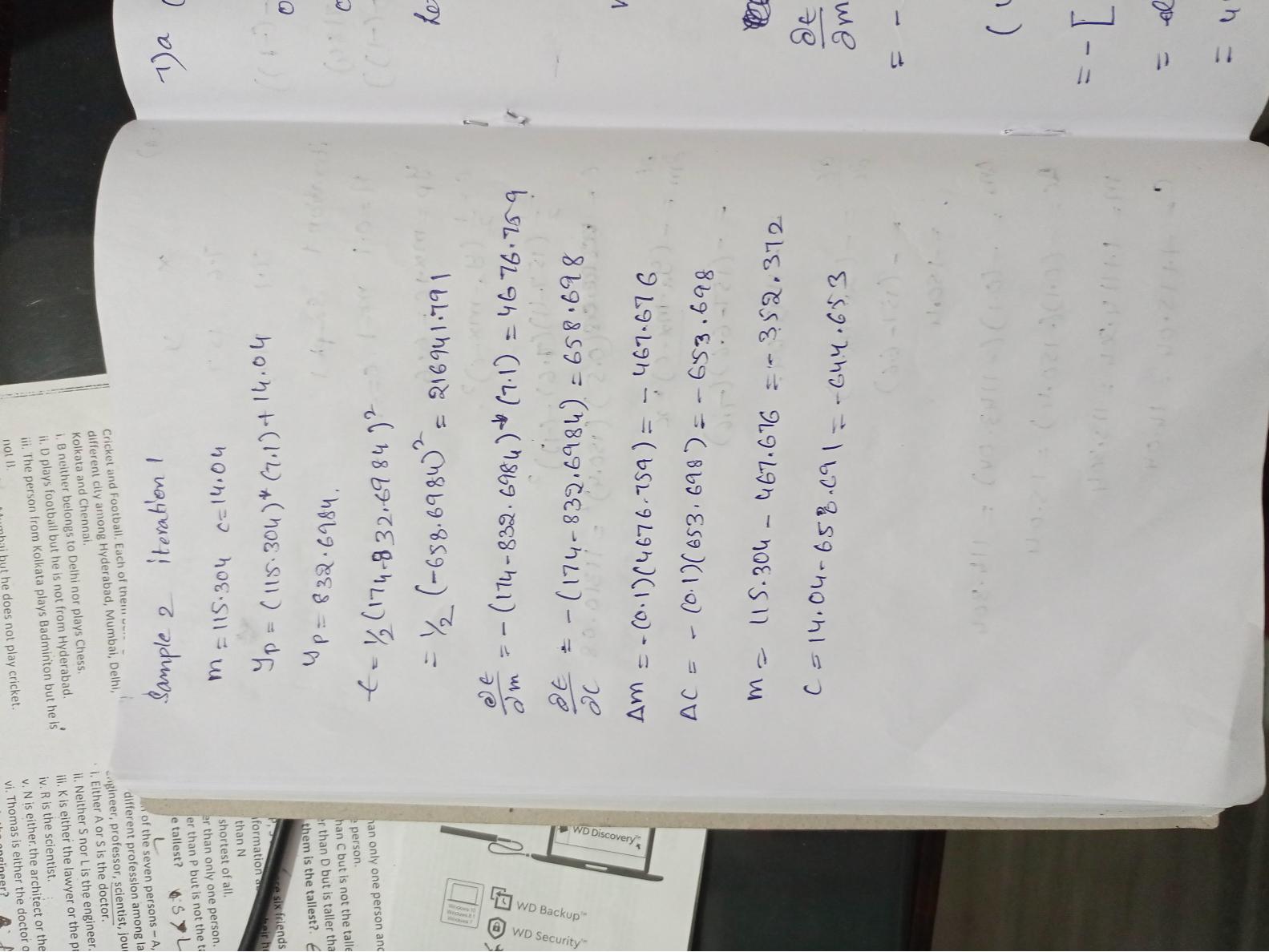
$$= -150.4$$

$$\Delta m = -(0.1)(-1143.04) = 114.304$$

$$\Delta c = -(0.1)(-150.4) = 15.04$$

$$m = 1 + 114.304 = 115.304$$

$$c = -1 + 15.04 = 14.04$$



iteration 2 sample 1

$$n=0.1 \quad m = -352.372 \quad c = -644.658$$

$$\begin{aligned} M_1 &= (-352.372)(7.6) + (-644.658) \\ &= -3322.685 \end{aligned}$$

$$\epsilon = \gamma_2(157 + 3322.685)^2 = 60541404.546,$$

$$\frac{\partial \epsilon}{\partial m} = -(3479.685)(7.6) = -26445.606$$

$$\frac{\partial \epsilon}{\partial c} = -3479.685$$

$$\begin{aligned} \Delta m &= -26445.606(0.1) \\ &= -2644.560 \end{aligned}$$

$$\Delta c = 3479.685 \approx 347.969$$

$$c = -644.658 + 347.969 = -296.689$$

$$m = -352.372 + 2644.560 = 2292.188$$

Iteration 2 sample 2

$$\eta = 0.1 \quad m = 2292.188$$

$$m = 2292.138$$

$$c = -296.689$$

$$y_p = mx + c$$

$$= (2292.188)(7.1) + (-296.689)$$

$$= 15977.846$$

$$e = \frac{1}{2} (174 - 15977.846)^2$$

$$= 124880771.035$$

$$\frac{\partial e}{\partial m} = (174 - 15977.846)(7.1)$$
$$= 112207.305$$

$$\frac{\partial e}{\partial c} = -(174 - 15977.846) = 15803.846$$

$$\Delta m = -11220.7305$$

$$\Delta c = -1580.3846$$

$$m = 2292.188 - 11220.7305$$

$$= -8928.544$$

$$c = -296.689 - 1580.3846$$

$$= -1877.074$$