

Iteration 2:

$$(1.3)$$
 $1.7 \times 1 + 2.1 = 3.8$ $3-3.8 = -0.8$

$$(3.6)$$
 $1.7 \times 3 + 2.1 = 7.2$ $6 - 7.2 = -1.2$

2. Gradients:

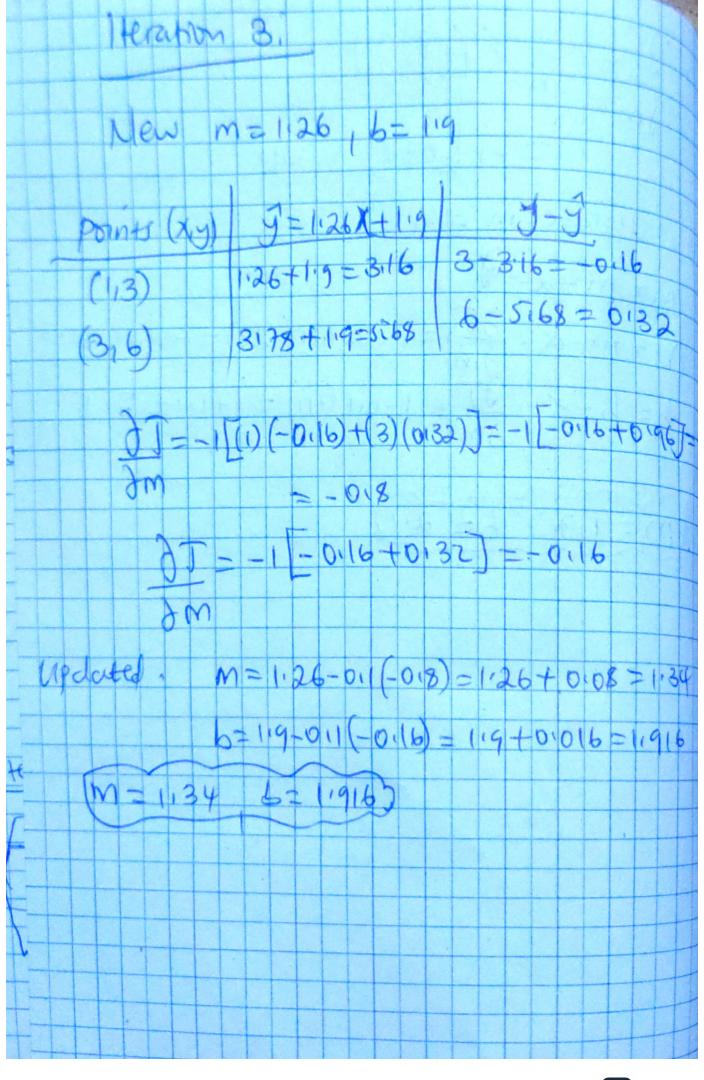
$$\frac{\partial J}{\partial m} = -1 \left[(1)(-0.8) + (3)(-1.2) \right] = -1(-0.8 - 3.6) = 4.4$$

$$\frac{\partial J}{\partial b} = -1(-0.8 - 1.2) = 2.0$$

3. Update:

$$m = 1.7 - 0.1(4.4) = 1.7 - 0.44 = 1.26$$

 $b = 2.1 - 0.1(2.0) = 2.1 - 0.2 = 1.9$





iteration 4: 1: New m= 1.34, b=1.916 Point (z, y) , 3-9 (1,3) 1.34 + 1.916=3.256, 3-3.256=-0.256 (3,6) 4.02 + 1.916 = 5.936, 6-5,936 = 0.064 2: gradient: Dm - - 1 (1)(-0.256) + (3)(0.064) + (0.064) + = -1[-0.256 + 0.192] - 0.064 DD = -1[-0.256+0.064] - 0.192 3: Update: m = 1.34 - 0.1 (0.064) -- A. 34 - 0.0064. - 1.335\$6 b= 1.916-0.1(0.1922) Z - 1.916 - 0.0192 - 1.8968

m = 1.3336 \$ b = 1.8968

