2. feladat! $h(x) = 0.2 + 0.26x$

X	h(x)	y	hata
0	$0.2+0.26 \cdot 0 = 0.2$	1	-0.8
1	$0.2+0.26 \cdot 1 = 0.46$	2	-0.54
2	$0.2+0.26 \cdot 2 = 0.72$	3	-0.28

Átlagos négyzet → $J(\theta) = \frac{1}{2d} \cdot \left((-0.8)^2 + (-0.54)^2 + (-0.28)^2 \right)$

$= \frac{\partial J(\theta)}{\partial \theta_0} = \frac{1}{m} \sum_{i=1}^{M} \left(\theta_0 + \theta_1 x_i - y_i \right) \cdot x_i \quad \left| \frac{\partial J(\theta)}{\partial \theta_0} = \frac{1}{m} \sum_{i=1}^{M} \right.$

$(\theta_0 + \theta_1 x_i - y_i) \cdot 1$

$\frac{1}{3} \left[(0.2+0.26 \cdot 0 -1) \cdot 0 + (0.2+0.26 \cdot 1 -2) \cdot 1 + (0.2+0.26 \cdot 2 -3) \right]$

$\frac{1}{3} \left\{ (0.2+0.26 \cdot 0 -1) + (0.2+0.26 \cdot 1 -2) + (0.2+0.26 \cdot 2 -3) \right\}$

$= -1.54$

$\theta_0 = 0.2 - (0.1) \cdot (-1.54) = 0.254$

$\theta_1 = 0.26 - (0.1) \cdot (-2.07) = 0.467$

---

3. feladat! $h(x) = 0.254 + 0.467x$

X	h(x)	y	hata
0	$0.254 + 0.467 \cdot 0$	1	-1
1	$0.254 + 0.467 \cdot 1$	2	-1.187
2	$0.254 + 0.467 \cdot 2$	3	-1.72

$\frac{\partial J(\theta)}{\partial(\theta_1)} = \frac{1}{3} \left[(0.254+0.467 \cdot 0 -1) \cdot 0 + (0.254+0.467 \cdot 1 -2) + \right.$

$\left. (0.254 + 0.467 \cdot 2 -3) \cdot 2 \right]$

$= -1.541$

$\frac{\partial J(\theta)}{\partial \theta_0} = \frac{1}{3} \left\{ (0.254+0.467 \cdot 0 -1) + (0.254 + 0.467 \cdot 1 -2) \right.$

$\left. (0.254+0.467 \cdot 2 -3) \right\}$

$= -1.187$

$\theta_0 = 0.254 - (0.1)(-1.187) = 0.4723$

$\theta_1 = 0.467 - (0.1)(-1.541) = 0.6171$