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1. iterasyon:

$\theta_0 = 0.2$ $\theta_1 = 0.26$ $J(\theta) = \frac{14}{6}$ $a = 0.1$

2. iterasyon:

$\boxed{x=1}$ $\boxed{y=2}$

$h(x) = \theta_0 + \theta_1 \cdot x$

$\quad = 0.2 + 0.26 \cdot 1$

$\quad = 0.46$,

$J(\theta) = \frac{1}{2n} \sum_{i=1}^{n} (h_\theta(x_i) - y_i)^2$

$\quad = \frac{1}{6} \cdot \left[((0.46-1)-1)^2 + ((0.2+0.26 \cdot 2)-3-2)^2 + ((0.2+0.26 \cdot 3-2)-3)^2 \right]$

$\quad = \frac{1}{6} \cdot \left[(-1.54)^2 + (-3.46)^2 + (-5.54)^2 \right]$

$\quad = 7.504$,

$\theta_0 = \theta_0 - a \cdot \frac{1}{m} \sum_{i=1}^{m} (hata(i)) = 0.2 - 0.1 \cdot \frac{1}{3} \cdot (-0.46-2)$

$\qquad\qquad\qquad\qquad\qquad\qquad = 0.282$,

$\theta_1 = \theta_1 - a \cdot \frac{1}{m} \sum_{i=1}^{m} (hata(i)) = 0.26 - 0.1 \cdot \frac{1}{3} \cdot (-0.46-2) \cdot 1$

$\qquad\qquad\qquad\qquad\qquad = 0.342$,

3. iterasyon:

$h(x) = \theta_0 + \theta_1 \cdot x$

$\quad = 0.282 + 0.342 \cdot 2$

$\quad = 0.966$,

$$J(\theta) = \frac{1}{2n} \sum_{i=1}^{m} (h_\theta(x_i) - y_i)^2$$

$$= \frac{1}{6} \cdot \left[(-0.638 - 1)^2 + (-1.28 - 2)^2 + (-1.922 - 3)^2 \right]$$

$$= \frac{1}{6} \cdot \left[(-1.638)^2 + (-3.28)^2 + (-4.922)^2 \right]$$

$$= 6.278 \; //$$

$$\theta_0 = \theta_0 - a \cdot \frac{1}{m} \sum_{i=1}^{m} (hata(i)) = 0.282 - 0.1 \cdot \frac{1}{3} \cdot (-0.966 - 3)$$

$$= 0.414 \; //$$

$$\theta_1 = \theta_1 - a \cdot \frac{1}{m} \cdot \sum_{i=1}^{m} (hata(i)) = 0.342 - 0.1 \cdot \frac{1}{3} (-0.9666 - 3) \cdot 2$$

$$= 0.606 \; //$$

2. iterasyon → $\theta_0 = 0.282$ $\theta_1 = 0.342$ $J(\theta) = 7.504$

3. iterasyon → $\theta_0 = 0.414$ $\theta_1 = 0.606$ $J(\theta) = 6.278$