$$\theta_j := \theta_j + \sqrt{\theta_0 \theta_1} \qquad \theta_0 = 1,\ \theta_1 = 2$$

$$\theta_0 := \theta_0 + \sqrt{\theta_0 \theta_1} = 1 + \sqrt{1 \times 2} = 1 + \sqrt{2}$$

$$\theta_1 := \theta_0 + \sqrt{\theta_0 \theta_1} = 2 + \sqrt{1 \times 2} = 2 + \sqrt{2}$$

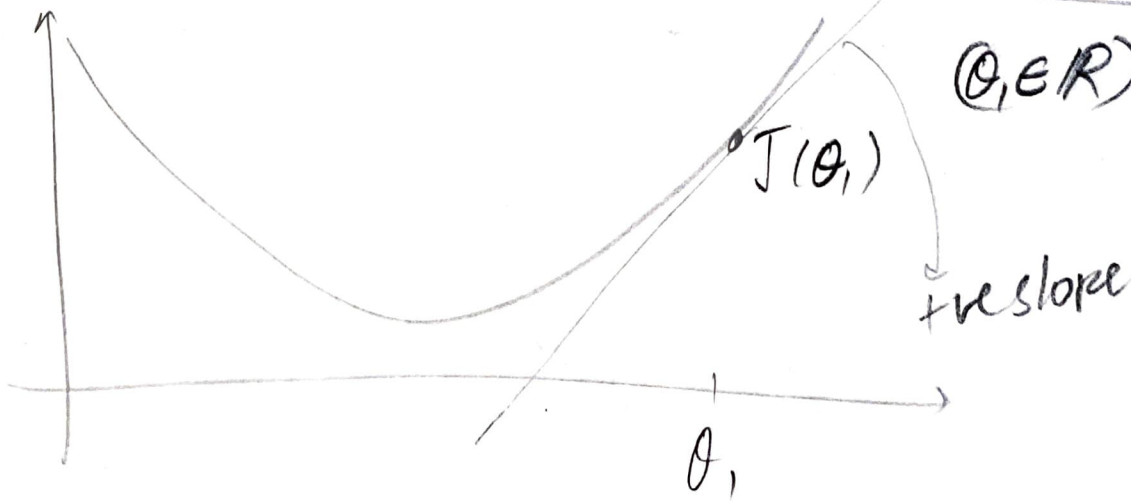
Correct Simultaneously update:

$$\text{temp}0 = \theta_0 - \alpha \frac{\partial J(\theta_0, \theta_1)}{\partial \theta_0}$$

$$\text{temp}1 = \theta_1 - \alpha \frac{J(\theta_0, \theta_1)}{\partial \theta_1}$$

$$\theta_0 = \text{temp}0$$

$$\theta_1 = \text{temp}1$$



$$\theta_1 := \theta_1 - \alpha \frac{d}{d\theta_1} (J(\theta_1))$$