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3<sup>rd</sup> iteration

$$m = 1.26 \quad b = 1.9$$

$$A(1, 3) \quad B(3, 6)$$

$$\hat{y}_A = 1.26(1) + 1.9$$

$$= 3.16$$

$$\hat{y}_B = 1.26(3) + 1.9$$

$$= 5.68$$

$$\frac{\Delta J}{\Delta m} = -\frac{2}{n} \sum_{i=1}^n (y_i - \hat{y}_i) x_i$$

$$= -\frac{2}{2} [(3 - 3.16) + (6 - 5.68) \times 3] = -0.8$$

$$\frac{\Delta J}{\Delta m} = -\frac{2}{2} [(3 - 3.16) + (6 - 5.68)] = -0.16$$

$$m_{\text{new}} = m_{\text{old}} + \Delta J / \Delta m$$

$$= 1.26 + 0.1(-0.8) = 1.34$$

$$b_{\text{new}} = 1.9 - (0.1)(0.16) = 1.916$$

$$\text{New equation } y = 1.34x + 1.916$$