

第 15 題

$$\text{令 } f(x) = x^2 - (\alpha + \beta)x + \alpha\beta$$

$$f'(x) = 2x - (\alpha + \beta)$$

$$5f'(1) = 2f(2)$$

$$10 - 5(\alpha + \beta) = 8 - 4(\alpha + \beta) + 2\alpha\beta$$

$$2\alpha\beta + \alpha + \beta = 2 \quad \dots\dots(1)$$

$$\int_0^1 f(x) dx = \left(\frac{1}{3}x^3 - \frac{(\alpha + \beta)}{2}x^2 + \alpha\beta x \right) \Big|_0^1 = 0$$

$$6\alpha\beta - 3\alpha - 3\beta = -2 \quad \dots\dots(2)$$

由(1),(2)

$$(\alpha, \beta) = \left(\frac{1}{3}, 1 \right)$$