

Дз №5

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$$\int_K (x-y)^2 dx + (x+y)^2 dy \quad K = OAB, O(0;0), A(2;0), B(4;2)$$

$$\int_{OA} (x-y)^2 dx + (x+y)^2 dy + \int_{AB} (x-y)^2 dx + (x+y)^2 dy =$$

$$(OA) \quad y = 0 \quad dy = d(0) = 0' dx = 0 \quad \int_0^2 (x-y)^2 dx =$$

$$\int_0^2 (x)^2 dx = \frac{2^3}{3} - 0 = \frac{8}{3}$$

$$(AB) \quad y = x - 2 \quad dy = d(x - 2) = (x - 2)' dx = dx$$

$$\int_2^4 (4)^2 dx + (2x - 2)^2 dx = \int_2^4 (8 + 4x^2 - 8x) dx =$$

$$(16 + \frac{32}{3} - \frac{32}{3}) - (32 + \frac{256}{3} - \frac{128}{3}) = -16 - \frac{128}{3} = -\frac{48 + 128}{3} = -\frac{176}{3}$$

$$\underline{\underline{-\frac{168}{3}}}$$

