№3

$$\int \sin^5 x \cos^5 x\,dx = \int \sin^5 x \cos^4 x\, d(\sin x) =$$

$\cos^4 x = (1-\sin^2 x)^2$

$$= \int \sin^5 x (1-\sin^2 x)(1-\sin^2 x)\, d(\sin x) =$$

$$= \int \sin^5 x (1 - 2\sin^2 x + \sin^4 x)\, d(\sin x) =$$

$$= \int \sin^5 x - 2\sin^7 x + \sin^9 x\, d(\sin x) =$$

$$= \frac{1}{6}\sin^6 x - \frac{2}{8}\sin^8 x + \frac{1}{10}\sin^{10} x + C$$

№2

Пример

$d(x,y) = \frac{x^2 \cdot xy}{x^2+y^2}$

1) $g: Y \to \mathbb{R}$
2) B_y - база в y
3) $f: X \to Y$
4) B_x - база в X

Пример

$d(x,y) =$ $\frac{xy}{x^2+y^2}$