

Вариант №01

$$1. \int \left(\frac{\operatorname{arctg} 2x}{1+4x^2} + 3x \right) dx$$

$$2. \int \frac{dx}{\sqrt[5]{1-6x}}$$

$$3. \int \frac{dx}{x(6-3\ln 3x)}$$

$$4. \int \frac{dx}{\cos^2 5x(3-7\operatorname{tg}^2 5x)}$$

Вариант №02

$$1. \int \cos^5 3x \cdot \sin 3x dx$$

$$2. \int \frac{dx}{x(5-7\ln^2 2x)}$$

$$3. \int \operatorname{tg} \sqrt{x} \frac{dx}{\sqrt{x}}$$

$$4. \int \frac{e^{2x}}{\sqrt{1-2e^{2x}}} dx$$

ОТВЕТЫ В 01.

$$\int \left(\frac{\operatorname{arctg} 2x}{1+4x^2} + 3x \right) dx = \frac{1}{4} \operatorname{arctg}^2 2x + \frac{3}{2} x^2 + C$$

$$\int \frac{dx}{\sqrt[5]{1-6x}} = -\frac{5}{24} \sqrt[5]{(1-6x)^4} + C$$

$$\int \frac{dx}{x(6-3\ln 3x)} = -\frac{1}{3} \ln(6-3\ln 3x) + C$$

$$\int \frac{dx}{\cos^2 5x(3-7\operatorname{tg}^2 5x)} = \frac{1}{10\sqrt{21}} \ln \left| \frac{\sqrt{7}\operatorname{tg} 5x + \sqrt{3}}{\sqrt{7}\operatorname{tg} 5x - \sqrt{3}} \right| + C$$

ОТВЕТЫ В 02.

$$\int \cos^5 3x \cdot \sin 3x dx = -\frac{1}{18} \cos^6 3x + C$$

$$\int \frac{dx}{x(5-7\ln^2 2x)} = \frac{1}{2\sqrt{35}} \ln \left| \frac{\sqrt{7} \ln 2x + \sqrt{5}}{\sqrt{7} \ln 2x - \sqrt{5}} \right| + C$$

$$\int \operatorname{tg} \sqrt{x} \frac{dx}{\sqrt{x}} = -2 \ln |\cos \sqrt{x}| + C$$

$$\int \frac{e^{2x}}{\sqrt{1-2e^{2x}}} dx = -\frac{1}{2} \sqrt{1-2e^{2x}} + C$$