

Analisi Matematica 1 - Lista n. 24

Calcolo di Integrali Definiti

Titolo nota

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Calcolare i seguenti integrali:

$$1) \int_0^{\frac{1}{4}} e^{4x} (16x + 60) dx$$

$$2) \int_{\frac{2}{7}}^1 \sqrt{21x-5} dx$$

$$3) \int_{-6}^{-\frac{11}{2}} 16(3x+17)^5 dx$$

$$4) \int_{\frac{\pi}{4}}^{\frac{\pi}{2}} \frac{\cos x}{(\sin x)^7} dx$$

$$5) \int_{\frac{1}{e}}^e \frac{4}{x \sqrt{17 + \ln(x^8)}} dx$$

$$6) \int_0^1 (2x^7 - x^3) \arctan(x^2) dx$$

$$7) \int_0^1 x^2 \cdot (5 + 6 \ln(1+x)) dx$$

$$8) \int_0^1 \frac{e^{\sqrt[5]{x}}}{15} dx$$

$$9) \int_0^{\frac{3}{2}} \frac{12x^2+1}{4 \sqrt[4]{1+x+4x^3}} dx$$

$$10) \int_{-1}^1 \frac{(3\pi + 4 \arctan x)^3}{\pi^4 (1+x^2)} dx$$

$$11) \int_e^{e^2} \frac{6(\ln x)^3 - 15 \ln x + \log_2 e}{x \ln x} dx$$

$$12) \int_1^{2^7} \frac{3x + \ln(x^{10})}{90 \sqrt[3]{x^2}} dx$$

$$13) \int_{-\pi}^{\pi} (2x^7 + \frac{x^2}{2} - 5x) \cos x dx$$

$$14) \int_6^{11} \frac{20}{x^2 - 12x + 61} dx$$

$$15) \int_{\sqrt{3}-1}^2 \frac{x + 6\sqrt{3} + 1}{x^2 + 2x + 4} dx$$

$$16) \int_{-1}^2 \frac{5x^2 + 3x - 28}{(x-5)(x+2)(x+3)} dx$$

$$17) \int_{\frac{1}{\sqrt{3}+1}}^2 \frac{36x - 48}{(3x^2 - 6x + 4)^2} dx$$

$$18) \int_{-2}^2 \frac{2|x| - x}{4} dx$$

$$19) \int_{-1}^4 e^{|x-2|} - e^{2-x} dx$$

$$20) \int_{-\frac{\pi}{2}}^0 \frac{6 \cos x - 6 \cos^3 x + 4 \sin 2x}{\cos^2 x - 6 \sin^3 x} dx$$

$$21) \int_{-1}^0 (3x^2 + 4x + 1) \ln(x+2)^3 \arctan x dx$$

$$22) \int_0^{15} \frac{36}{\sqrt{x+1} + \sqrt{x+49}} dx$$

$$23) \int_0^1 (x^{24} + 12x^{23}) e^{2x-2} dx$$

$$24) \int_1^{\sqrt[5]{2}} \frac{20}{x^{11} + 2x} dx$$