

Esercitazione sul calcolo di integrali indefiniti

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| 1) $\int (2\sqrt{x} + x^2) dx =$ | R: $\frac{4}{3}x^{\frac{3}{2}} + \frac{x^3}{3} + C$ |
| 2) $\int \left(-x^3 - \frac{1}{2}x^2 + \frac{4}{5}x + 3\right) dx =$ | R: $-\frac{x^4}{4} - \frac{x^3}{6} + \frac{2x^2}{5} + 3x + C$ |
| 3) $\int (x-2)(x+2)^2 dx =$ | R: $\frac{x^4}{4} + \frac{2}{3}x^3 - 2x^2 - 8x + C$ |
| 4) $\int (2x-1)(x+1)^2 dx =$ | R: $\frac{x^4}{2} + x^3 - x + C$ |
| 5) $\int \frac{x^4 - 3x^2 + 7}{x^3} dx =$ | R: $\frac{x^2}{2} - 3\ln x - \frac{7}{2x^2} + C$ |
| 6) $\int \left(\sqrt[3]{x^2} + \frac{x^2-1}{\sqrt{x}}\right) dx =$ | R: $\frac{3}{5}x^{\frac{5}{3}} + \frac{2}{5}x^{\frac{5}{2}} - 2\sqrt{x} + C$ |
| 7) $\int (5e^x + 3^x) dx =$ | R: $5e^x + \frac{3^x}{\ln(3)} + C$ |
| 8) $\int (2e^{4x} + e^{3x} + e^{-x}) dx =$ | R: $\frac{1}{2}e^{4x} + \frac{1}{3}e^{3x} - e^{-x} + C$ |
| 9) $\int e^{x^2-1} \cdot x dx =$ | R: $\frac{1}{2}e^{x^2-1} + C$ |
| 10) $\int 5^{2x} dx =$ | R: $\frac{1}{2} \cdot \frac{5^{2x}}{\ln(5)} + C$ |
| 11) $\int (e^{2x} - 3)^2 dx =$ | R: $\frac{e^{4x}}{4} - 3e^{2x} + 9x + C$ |
| 12) $\int (\pi^{3x} - e^{-2x} + e^{3x+5}) dx =$ | R: $\frac{\pi^{3x}}{3 \cdot \ln(\pi)} + \frac{e^{-2x}}{2} + \frac{e^{3x+5}}{3} + C$ |
| 13) $\int \frac{dx}{23x+1} =$ | R: $\frac{1}{23} \cdot \ln(23x+1) + C$ |
| 14) $\int \frac{x dx}{2x^2+1} =$ | R: $\frac{1}{4} \ln(2x^2+1) + C$ |
| 15) $\int \frac{e^x dx}{e^x+2} =$ | R: $\ln(e^x+2) + C$ |
| 16) $\int \frac{e^x dx}{e^x-2} =$ | R: $\ln(e^x-2) + C$ |
| 17) $\int \frac{e^{2x}-1 dx}{e^x+1} =$ | R: $e^x - x + C$ |
| 18) $\int (4e^x - e^{-x})^2 dx =$ | R: $8e^{2x} - 8x - \frac{e^{-2x}}{2} + C$ |
| 19) $\int \frac{e^{2x}-2e^x}{e^{x+1}} dx =$ | R: $\frac{1}{e}(e^x - 2x) + C$ |
| 20) $\int \frac{2}{x \ln(x)} dx =$ | R: $2 \ln(\ln(x)) + C$ |