

$y = e^x$, $\frac{dy}{dx} = e^x \rightarrow$ قانون

$\int e^x \cdot dx = e^x + C$

Ex. $\int x e^{x^2+2} \cdot dx = \frac{1}{2} \int 2x e^{x^2+2} \cdot dx = \frac{1}{2} e^{x^2+2} + C$

Q1: $\int e^{2x} \cdot dx = \frac{1}{2} e^{2x} + C$

Q2: $\int x e^{x^2} \cdot dx = \frac{1}{2} e^{x^2} + C$

Q3: $\int e^{\sin x} \cdot \cos x \cdot dx = e^{\sin x} + C$

Q4: $\int e^{x/3} \cdot dx = 3e^{x/3} + C$

Q5: $\int -e^{-x} \cdot dx = -e^{-x} + C$

Q6: $\int e^{x/2} \cdot dx = 2e^{x/2} + C$

Q7: $\int \frac{dx}{e^x} = [-e^{-x}]_0^1 = -\frac{1}{e^x} + 1$

Q8: $\int \frac{4dx}{e^x} = -4e^{-x} + C$

Q9: $\int \frac{e^x \cdot dx}{1+e^x} = \ln(1+e^x) + C$

Q10: $\int \frac{dx}{x \ln x} = \ln(\ln x) + C$

Q11: $\int \frac{e^x - e^{-x}}{e^x + e^{-x}} \cdot dx = \ln(e^x + e^{-x}) + C$

Q12: $\int \frac{e^x \cdot dx}{1+2e^x} = \frac{1}{2} \ln(1+2e^x) + C$

Q13: $\int \frac{e^{\sqrt{x}}}{\sqrt{x}} \cdot dx = 2e^{\sqrt{x}} + C$

Q14: $\int \frac{e^{\sqrt{x+1}}}{\sqrt{x+1}} \cdot dx = 2e^{\sqrt{x+1}} + C$

Q15: $\int \frac{e^{2x} + e^{-2x}}{e^{2x} - e^{-2x}} \cdot dx = \frac{1}{2} \ln(e^{2x} - e^{-2x}) + C$