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Mathematics II

Chapter seven

Products and powers of Trigonometric Functions

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Since

- $\int \sin^n(ax) \cos ax \, dx = \frac{\sin^{n+1} ax}{a(n+1)} + c$ for $n \neq -1$

- If $n = -1$

- $\int \frac{\cos ax}{\sin ax} \, dx = \frac{1}{a} \ln|\sin ax| + c$

- And

- $\int \cos^n(ax) \sin ax \, dx = -\frac{\cos^{n+1} ax}{a(n+1)} + c$ for $n \neq -1$

- $\int \tan ax \, dx = \int \frac{\sin ax}{\cos ax} = -\frac{1}{a} \ln|\cos ax| + c$

Power condition

- $\int \sin^3 x \, dx$
- $\int \cos^{2n+1} x \, dx$
- $\int \sin^{2n+1} x \, dx$
- $\int \tan^4 x \, dx$
- $\int \tan^n x \, dx$
- $\int \sec^{2n} x \, dx$
- $\int \sec^6 x \, dx$