

Fourier series

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Relation of trigonometric function: multiplication to sum

$$2\sin(A)\cos(B) = \sin(A+B) + \sin(A-B)$$

$$2\cos(A)\cos(B) = \cos(A+B) + \cos(A-B)$$

$$2\sin(A)\sin(B) = \cos(A-B) - \cos(A+B)$$

Relation of trigonometric function: sum to multiplication

$$\sin(A+B) = \sin(A)\cos(B) + \cos(A)\sin(B)$$

$$\sin(A-B) = \sin(A)\cos(B) - \cos(A)\sin(B)$$

$$\cos(A+B) = \cos(A)\cos(B) - \sin(A)\sin(B)$$

$$\cos(A-B) = \cos(A)\cos(B) + \sin(A)\sin(B)$$

Orthogonal properties:

$$\int_{-\pi}^{\pi} \cos(mt)\sin(nt)dt = 0$$

$$\int_{-\pi}^{\pi} \cos(mt)\cos(nt)dt = \delta_{mn}\pi$$

$$\int_{-\pi}^{\pi} \sin(mt)\sin(nt)dt = \delta_{mn}\pi$$

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【存檔：c:/ctex/course/math2/fouri3.te】 【建檔:Mar./3/'01】