Integrales de uso frecuente para las series de Fourier

$$\int sin(nx)dx = -\frac{1}{n}cos(nx) + C \tag{1}$$

$$\int cos(nx)dx = \frac{1}{n}sin(nx) + C \tag{2}$$

$$\int xsin(nx)dx = \frac{1}{n^2}sin(nx) + \frac{x}{n}cos(nx) + C \tag{3}$$

$$\int xcos(nx)dx = \frac{1}{n^2}cos(nx) + \frac{x}{n}sin(nx) + C \tag{4}$$

$$\int x^2sin(nx)dx = \frac{2x}{n^2}sin(nx) + \left(\frac{2}{n^3} - \frac{x^2}{n}\right) sin(nx) + C \tag{5}$$

$$\int x^2cos(nx)dx = \frac{2x}{n^2}cos(nx) + \left(\frac{x^2}{n} - \frac{2}{n^3}\right) sin(nx) + C \tag{6}$$

$$\int sin(nx)cos(nx)dx = \frac{1}{2n}sin^2(nx) + C \tag{7}$$

$$\int sin(mx)sin(nx)dx = \frac{sin\left[(m-n)x\right]}{2(m-n)} - \frac{sin\left[(m+n)x\right]}{2(m+n)} + C \tag{8}$$

$$\int sin(mx)cos(nx)dx = \frac{-cos\left[(m-n)x\right]}{2(m-n)} - \frac{cos\left[(m+n)x\right]}{2(m+n)} + C \tag{9}$$

$$\int cos(mx)scosin(nx)dx = \frac{sin\left[(m-n)x\right]}{2(m-n)} + \frac{sin\left[(m+n)x\right]}{2(m+n)} + C \tag{10}$$