1) Complex Fourier Series
   Consider,
$$x(t) = \sum_{n=-\infty}^{\infty} c_n e^{j2\pi nft} \tag{1}$$
   where c_n is the exponential fourier coefficient.
$$c_n = \frac{1}{T}\int_0^T x(t)e^{-j2\pi nft}\,dt \tag{2}$$
   where T is the time period of function $x(t)$.
2) Trigonometric Fourier Series
   We can write:
$$e^{j2\pi nft} = cos(2\pi nftt) + jsin(2\pi nft) \tag{3}$$
   Substituting (3) in (1)
$$x(t) = \sum_{n=-\infty}^{\infty} c_n\left(\cos(2\pi nft) + j\sin(2\pi nft)\right) \tag{4}$$
$$= a_0 + \sum_{n=1}^{\infty} (a_n\cos(2\pi nft)) + (b_n\sin(2\pi nft)) \tag{5}$$
   where a_0, a_n and b_n are trigonometric fourier series.
$$a_0 = c_0 \tag{6}$$
$$= \frac{1}{T}\int_0^T x(t)\,dt \tag{7}$$
$$a_n = 2Re(c_n) \tag{8}$$
$$= \frac{2}{T}\int_0^T x(t)\cos(2\pi nft)\,dt \tag{9}$$
$$b_n = -2Im(c_n) \tag{10}$$
$$= \frac{2}{T}\int_0^T x(t)\sin(2\pi nft)\,dt \tag{11}$$