Fourierjeva vrsta na intervalu $[-a,a]$:

$$f(x)=a_0+\sum_{n=1}^{\infty}\left(a_n\cos\frac{n\pi x}{a}+b_n\sin\frac{n\pi x}{a}\right)$$

Koeficienti:

$$a_0=\frac{1}{2a}\int_{-a}^{a}f(x)dx$$

$$a_n=\frac{1}{a}\int_{-a}^{a}f(x)\cos\frac{n\pi x}{a}dx$$

$$b_n=\frac{1}{a}\int_{-a}^{a}f(x)\sin\frac{n\pi x}{a}dx$$

Taylorjeva vrsta v okolici točke a:

$$f(x)=\sum_{n=0}^{m}\frac{f^{(n)}(a)}{n!}(x-a)^n+R_m$$

Ostanek vrste:

$$R_m(x)=\sum_{n=m+1}^{\infty}a_n(x-a)^n$$

Ocena ostanka vrste:

$$R_m(x)=\frac{f^{(m+1)}(\xi)}{(m+1)!}(x-a)^{m+1}$$

Fourierjeva vrsta sode funkcije s periodo $2a$:

$$a_0+\sum_{n=1}^{\infty}a_n\cos\frac{n\pi x}{a}$$

Koeficienti:

$$a_0=\frac{1}{a}\int_{0}^{a}f(x)dx$$

$$a_n=\frac{2}{a}\int_{0}^{a}f(x)\cos\frac{n\pi x}{a}dx$$

Fourierjeva vrsta lihe funkcije s periodo $2a$:

$$\sum_{n=1}^{\infty}b_n\sin\frac{n\pi x}{a}$$

Koeficienti:

$$b_n=\frac{2}{a}\int_{0}^{a}f(x)\sin\frac{n\pi x}{a}dx$$

Fourierjeva formula (integral):

$$f(x)=\frac{1}{\pi}\int_{0}^{\infty}[A(\omega)\cos\omega x+B(\omega)\sin\omega x]d\omega$$

$$\omega=\frac{n\pi}{a}$$

Koeficienti:

$$A(\omega)=\int_{-\infty}^{\infty}f(t)\cos\omega t dt$$

$$B(\omega)=\int_{-\infty}^{\infty}f(t)\sin\omega t dt$$

Fourierjev integral sode funkcije:

$$f(x)=\frac{1}{\pi}\int_{0}^{\infty}A(\omega)\cos\omega x dx$$

Koeficienti:

$$A(\omega)=2\int_{0}^{\infty}f(t)\cos\omega t dt$$

Fourierjev integral lihe funkcije:

$$f(x)=\frac{1}{\pi}\int_{0}^{\infty}B(\omega)\sin\omega x dx$$

Koeficienti:

$$B(\omega)=2\int_{0}^{\infty}f(t)\sin\omega t dt$$