

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

$$\begin{aligned} a_n &= \frac{1}{\pi} \int_{-\pi}^{\pi} f(x) \cos nx \, dx = \\ &= \frac{1}{\pi} \int_{-\pi}^{\pi} x^2 \cos nx \, dx \end{aligned}$$

$$\begin{aligned} b_n &= \frac{1}{\pi} \int_{-\pi}^{\pi} f(x) \sin nx \, dx = \\ &= \frac{1}{\pi} \int_{-\pi}^{\pi} x^2 \sin nx \, dx \end{aligned}$$