

p = Series[BesselJ[0, x], {x, 0, 50}]

$$\begin{aligned}
 1 - \frac{x^2}{4} + \frac{x^4}{64} - \frac{x^6}{2304} + \frac{x^8}{147456} - \frac{x^{10}}{14745600} + \frac{x^{12}}{2123366400} - \frac{x^{14}}{416179814400} + \\
 \frac{106542032486400}{x^{16}} - \frac{34519618525593600}{x^{18}} + \frac{13807847410237440000}{x^{20}} - \\
 \frac{6682998146554920960000}{x^{22}} + \frac{3849406932415634472960000}{x^{24}} - \\
 \frac{2602199086312968903720960000}{x^{26}} + x^{28} / 2040124083669367620517232640000 - \\
 x^{30} / 1836111675302430858465509376000000 + \\
 x^{32} / 1880178355509689199068681601024000000 - \\
 x^{34} / 2173486178969200714123395930783744000000 + \\
 x^{36} / 2816838087944084125503921126295732224000000 - \\
 x^{38} / 4067514198991257477227662106371037331456000000 + \\
 x^{40} / 6508022718386011963564259370193659730329600000000 - \\
 x^{42} / 11480152075232925103727353529021615764301414400000000 + \\
 x^{44} / 22225574417650943000816156432185848119687538278400000000 - \\
 x^{46} / 47029315467749395389726987010505254621258830997094400000000 + \\
 x^{48} / 108355542837694606977930978072204106647380346617305497600000000 - \\
 x^{50} / 27088885709423651744482744518051026661845086654326374400000000000 + \\
 O[x]^{51}
 \end{aligned}$$

k = Normal[Series[BesselJ[0, x], {x, 0, 45}]]

$$\begin{aligned}
 1 - \frac{x^2}{4} + \frac{x^4}{64} - \frac{x^6}{2304} + \frac{x^8}{147456} - \frac{x^{10}}{14745600} + \frac{x^{12}}{2123366400} - \\
 \frac{416179814400}{x^{14}} + \frac{106542032486400}{x^{16}} - \frac{34519618525593600}{x^{18}} + \\
 \frac{13807847410237440000}{x^{20}} - \frac{6682998146554920960000}{x^{22}} + \\
 \frac{3849406932415634472960000}{x^{24}} - \frac{2602199086312968903720960000}{x^{26}} + \\
 \frac{2040124083669367620517232640000}{x^{28}} - \frac{1836111675302430858465509376000000}{x^{30}} + \\
 \frac{1880178355509689199068681601024000000}{x^{32}} - \\
 \frac{2173486178969200714123395930783744000000}{x^{34}} + \\
 \frac{2816838087944084125503921126295732224000000}{x^{36}} - \\
 \frac{4067514198991257477227662106371037331456000000}{x^{38}} + \\
 \frac{6508022718386011963564259370193659730329600000000}{x^{40}} - \\
 \frac{11480152075232925103727353529021615764301414400000000}{x^{42}} + \\
 \frac{22225574417650943000816156432185848119687538278400000000}{x^{44}}
 \end{aligned}$$

`Plot[k, {x, 0, 10}]`

