1383. $\sqrt[3]{\sin x^3}$.

$\sin t = 0 + t + 0 - \frac{t^3}{3!} + 0 + \frac{t^5}{5!} + 0 + \underline{0}(t^7)$

$\sin x^3 = x^3 - \frac{x^9}{3!} + \frac{x^{15}}{5!} + \underline{0}(x^{21})$

$\sqrt[3]{\sin x^3} = \sqrt[3]{x^3 - \frac{x^9}{3!} + \frac{x^{15}}{5!} + \underline{0}(x^{21})} = x\sqrt[3]{1 - \frac{x^6}{3!} + \frac{x^{12}}{5!} + \underline{0}(x^{18})}$,

$\sqrt[3]{1+t} = 1 + \frac{1}{3}t - \frac{1}{9}t^2 + \underline{0}(t^3)$

т.е. $x\sqrt[3]{1 + \left(-\frac{x^6}{3!} + \frac{x^{12}}{5!} + \underline{0}(x^{18})\right)} =$

$= x\left(1 + \frac{1}{3}\left(-\frac{x^6}{3!} + \frac{x^{12}}{5!} + \underline{0}(x^{18})\right) - \frac{1}{9}\left(-\frac{x^6}{3!} + \frac{x^{12}}{5!} + \underline{0}(x^{18})\right)^2 + \underline{0}(x^{18})\right) =$

$= x\left(1 - \frac{x^6}{18} + \frac{x^{12}}{360} - \frac{x^{12}}{324} + \underline{0}(x^{18})\right) = \underline{x - \frac{x^7}{18} - \frac{x^{13}}{3240} + \underline{0}(x^{19})}$

1384. $\ln\cos x$.

$\cos x = 1 - \frac{x^2}{2} + \frac{x^4}{4!} - \frac{x^6}{6!} + \underline{0}(x^8)$

$\ln\cos x = \ln\left(1 - \frac{x^2}{2} + \frac{x^4}{4!} - \frac{x^6}{6!} + \underline{0}(x^8)\right)$.

$\ln(1+t) = t - \frac{t^2}{2} + \frac{t^3}{3} + \underline{0}(t^4)$

$\ln\left(1 - \frac{x^2}{2} + \frac{x^4}{4!} - \frac{x^6}{6!} + \underline{0}(x^8)\right) =$

$= -\frac{x^2}{2} + \frac{x^4}{4!} - \frac{x^6}{6!} + \underline{0}(x^8) - \frac{1}{2}\left(-\frac{x^2}{2} + \frac{x^4}{4!} - \frac{x^6}{6!} + \underline{0}(x^8)\right)^2 + \frac{1}{3}\left(-\frac{x^2}{2} + \frac{x^4}{4!} - \frac{x^6}{6!} + \underline{0}(x^8)\right)^3 + \underline{0}$

$= -\frac{x^2}{2} + \frac{x^4}{4!} - \frac{x^6}{6!} - \frac{1}{2}\left(\frac{x^4}{4} - \frac{x^6}{24}\right) + \frac{1}{3}\left(-\frac{x^6}{8}\right) + \underline{0}(x^8) =$

$= \underline{-\frac{x^2}{2} - \frac{x^4}{12} - \frac{x^6}{45} + \underline{0}(x^8)}$

1385. $\sin(\sin x)$ $\quad \sin x = x - \frac{x^3}{3!} + \underline{0}(x^5)$

$\sin(\sin x) = \sin\left(x - \frac{x^3}{3!} + \underline{0}(x^5)\right) =$

$= x - \frac{x^3}{3!} + \underline{0}(x^5) - \frac{1}{3!}\left(x - \frac{x^3}{3!} + \underline{0}(x^5)\right)^3 + \underline{0}(x^5) =$

$= x - \frac{x^3}{3!} - \frac{x^3}{3!} + \underline{0}(x^5) = \underline{x - \frac{x^3}{3} + \underline{0}(x^5)}$