

Exercises

E16.40 [1FJ] Write the Taylor polynomial of $f(x)$ around $x_0 = 0$, using "Landau's calculus of $o(x^n)$ " seen above.

$f(x)$	=	$p(x) + o(x^4)$
$(\cos(x))^2$	=	$+o(x^4)$
$(\cos(x))^3$	=	$+o(x^4)$
$\cos(x)e^x$	=	$+o(x^4)$
$\cos(\sin(x))$	=	$+o(x^4)$
$\sin(\cos(x))$	=	$+o(x^4)$
$\log(\log(e + x))$	=	$+o(x^3)$
$(1 + x)^{1/x}$	=	$+o(x^3)$

(A little imagination is required to address the last two. To reduce the computations, develop the last two only up to $o(x^3)$).

Solution 1. [1FK]