KJENTE OG KJÆRE MACLAURINREKKER

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\begin{array}{llcll}
(1) & \dfrac{1}{1-x} & = & \displaystyle\sum_{n=0}^{\infty} x^n & -1 < x < 1 \\
(2) & \dfrac{1}{(1-x)^2} & = & \displaystyle\sum_{n=1}^{\infty} n x^{n-1} & -1 < x < 1 \\
(3) & \ln(1+x) & = & \displaystyle\sum_{n=1}^{\infty} \frac{(-1)^{n-1}}{n} x^n & -1 < x \leq 1 \\
(4) & \tan^{-1} x & = & \displaystyle\sum_{n=0}^{\infty} \frac{(-1)^n}{2n+1} x^{2n+1} & -1 \leq x \leq 1 \\
(5) & \dfrac{1}{2}\ln\dfrac{1+x}{1-x} & = & \displaystyle\sum_{n=0}^{\infty} \frac{1}{2n+1} x^{2n+1} & -1 < x < 1 \\
(6) & e^x & = & \displaystyle\sum_{n=0}^{\infty} \frac{x^n}{n!} & x \in \mathbb{R} \\
(7) & \sin x & = & \displaystyle\sum_{n=0}^{\infty} \frac{(-1)^n}{(2n+1)!} x^{2n+1} & x \in \mathbb{R} \\
(8) & \cos x & = & \displaystyle\sum_{n=0}^{\infty} \frac{(-1)^n}{(2n)!} x^{2n} & x \in \mathbb{R} \\
(9) & \sinh x & = & \displaystyle\sum_{n=0}^{\infty} \frac{x^{2n+1}}{(2n+1)!} & x \in \mathbb{R} \\
(10) & \cosh x & = & \displaystyle\sum_{n=0}^{\infty} \frac{x^{2n}}{(2n)!} & x \in \mathbb{R} \\
(11) & (1+x)^r & = & 1 + \displaystyle\sum_{n=1}^{\infty} \frac{r(r-1)(r-2)\cdots(r-n+1)}{n!} x^n, & -1 < x < 1
\end{array}
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NB! (2)-(4) fås fra (1) ved derivasjon eller integrasjon, mens (5) (som ikke står i boken) fås fra (3) og $\ln \frac{1+x}{1-x} = \ln(1+x) - \ln(1-x)$. (9)-(10) fås fra (6).

Vi trenger altså bare huske rekkene (1), (6), (7) (8) og (11).