

## STANDARDGRÄNSVÄRDEN

1.  $\lim_{x \rightarrow 0} \frac{\sin x}{x} = 1$
2.  $\lim_{x \rightarrow \infty} \frac{\ln x}{x^a} = 0$ , om  $a > 0$
3.  $\lim_{x \rightarrow 0^+} x^a \ln x = 0$ , om  $a > 0$
4.  $\lim_{x \rightarrow \infty} \frac{x^a}{e^x} = 0$ , om  $a > 0$
5.  $\lim_{x \rightarrow -\infty} |x|^a e^x = 0$ , om  $a > 0$
6.  $\lim_{n \rightarrow \infty} \left(1 + \frac{x}{n}\right)^n = e^x$

## STANDARDDERIVATOR

1.  $D(x^r) = rx^{r-1}$ ,  $r \neq 0$
2.  $D(\sin x) = \cos x$
3.  $D(\cos x) = -\sin x$
4.  $D(\tan x) = \frac{1}{\cos^2 x} = 1 + \tan^2 x$
5.  $D(\arcsin x) = \frac{1}{\sqrt{1-x^2}}$
6.  $D(\arccos x) = -\frac{1}{\sqrt{1-x^2}}$
7.  $D(\arctan x) = \frac{1}{1+x^2}$
8.  $D(\ln x) = \frac{1}{x}$ ,  $x > 0$
9.  $D(\ln |x|) = \frac{1}{x}$ ,  $x \neq 0$
10.  $D(e^x) = e^x$