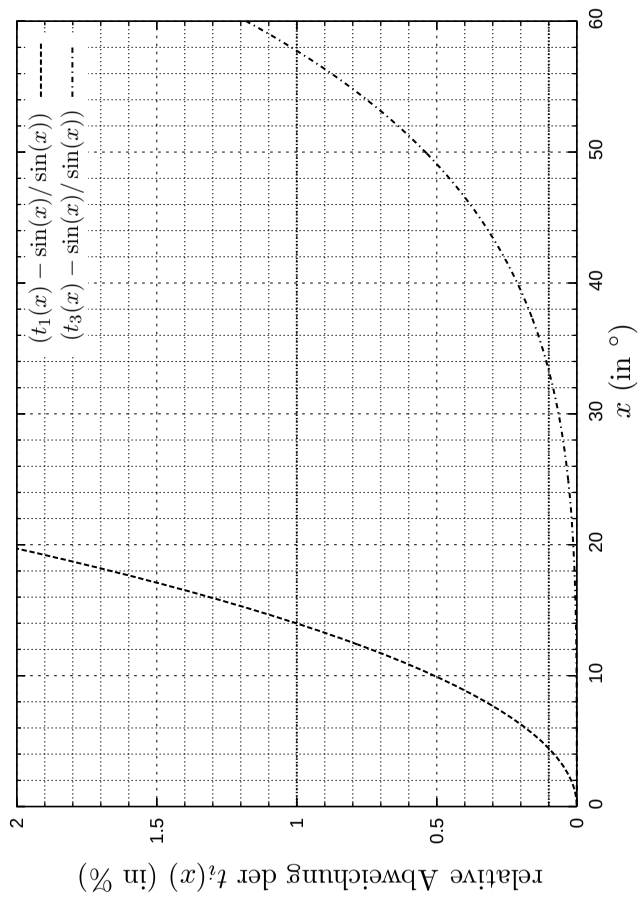
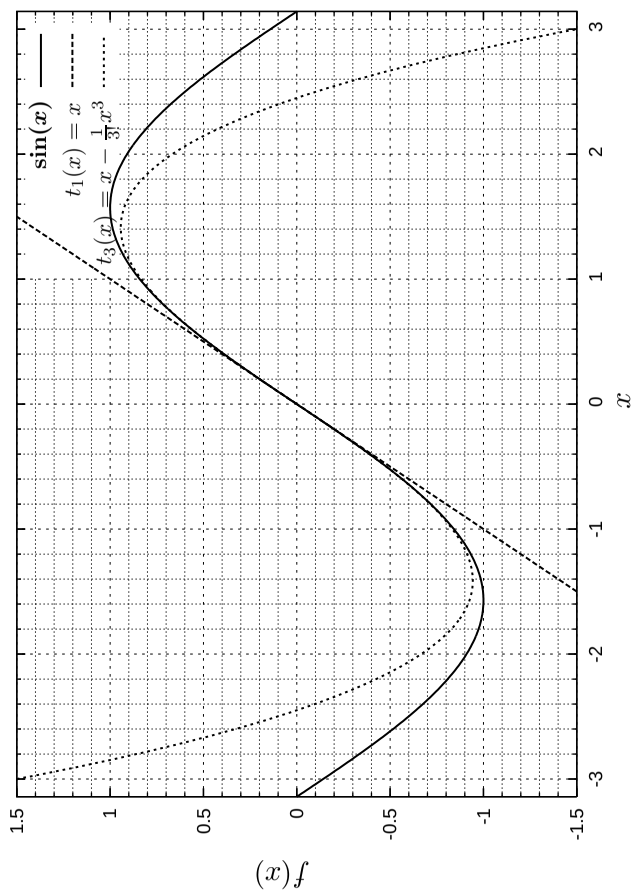
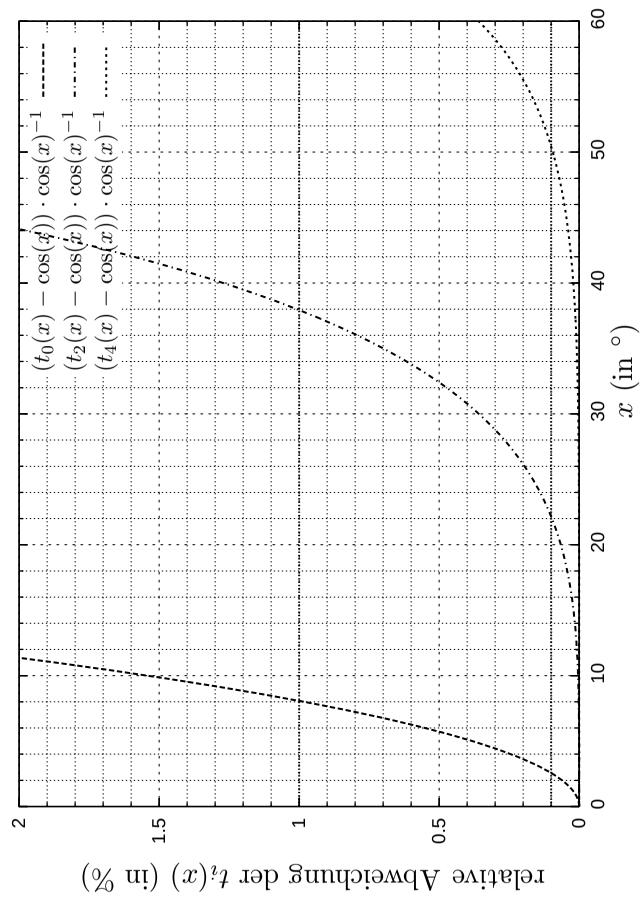
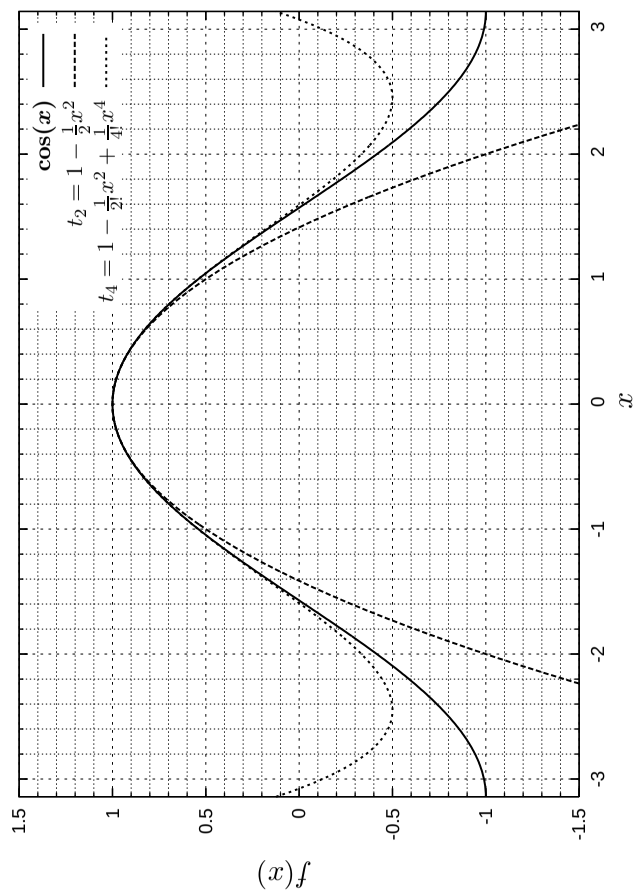
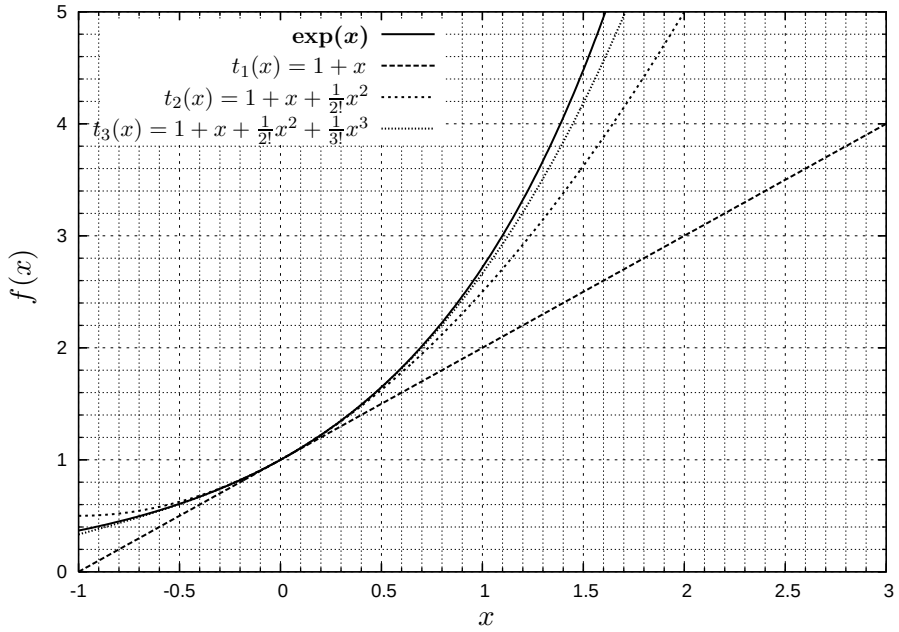
Ein paar häufige Beispiele für Taylorentwicklungen und deren Abweichungen von der ursprünglichen Funktion

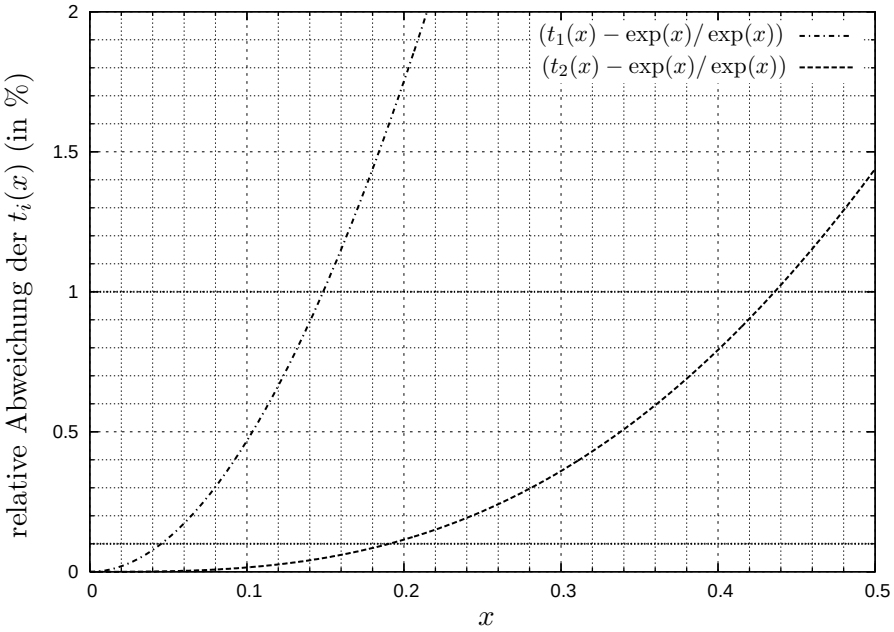


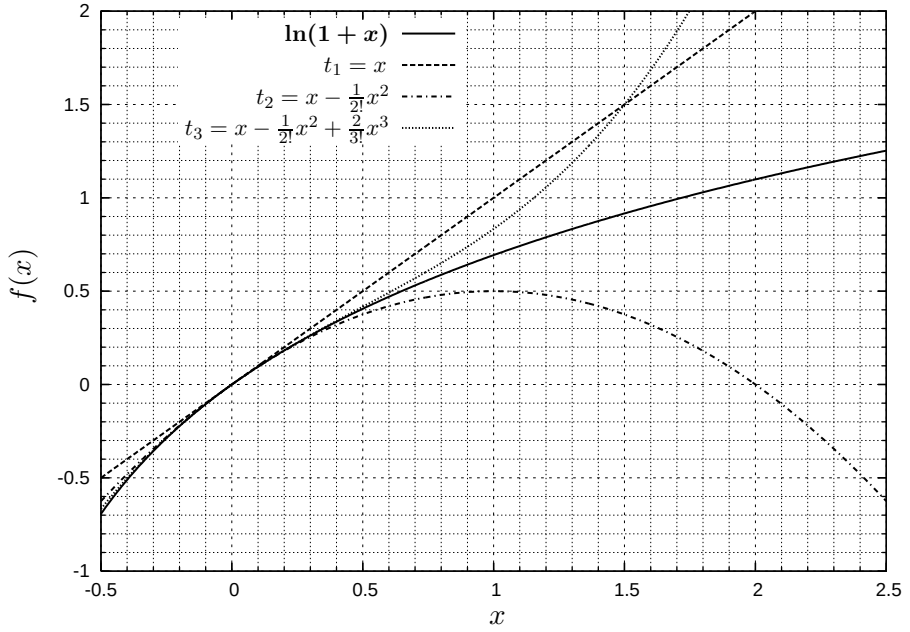


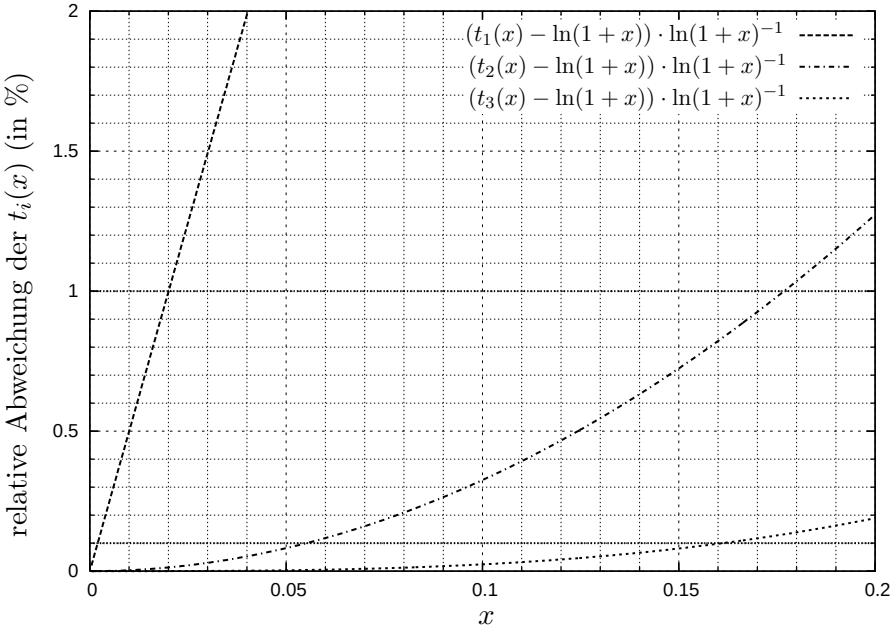





exp(x)
$t_1(x) = 1 + x$
$t_2(x) = 1 + x + \frac{1}{2!}x^2$
$t_3(x) = 1 + x + \frac{1}{2!}x^2 + \frac{1}{3!}x^3$
$f(x)$
x


$(t_1(x) - \exp(x)/\exp(x))$
$(t_2(x) - \exp(x)/\exp(x))$
relative Abweichung der $t_i(x)$ (in %)
x


ln(1 + x)
$t_1 = x$
$t_2 = x - \frac{1}{2!}x^2$
$t_3 = x - \frac{1}{2!}x^2 + \frac{2}{3!}x^3$
$f(x)$
x


$(t_1(x) - \ln(1+x)) \cdot \ln(1+x)^{-1}$
$(t_2(x) - \ln(1+x)) \cdot \ln(1+x)^{-1}$
$(t_3(x) - \ln(1+x)) \cdot \ln(1+x)^{-1}$
relative Abweichung der $t_i(x)$ (in %)
x