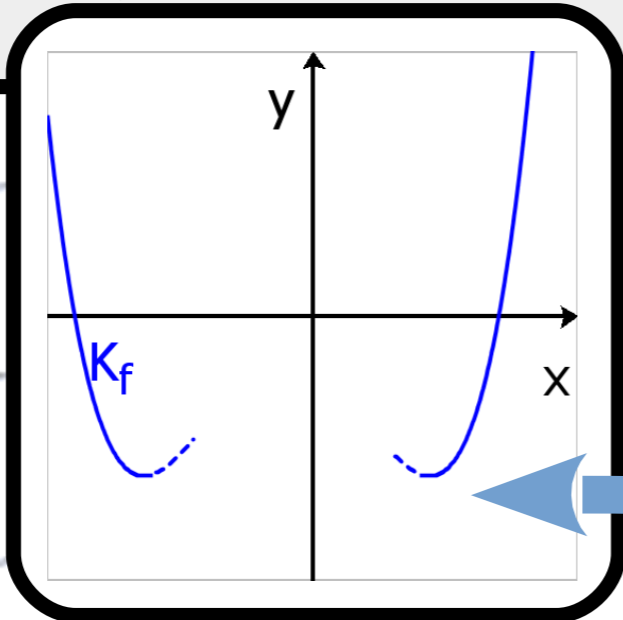
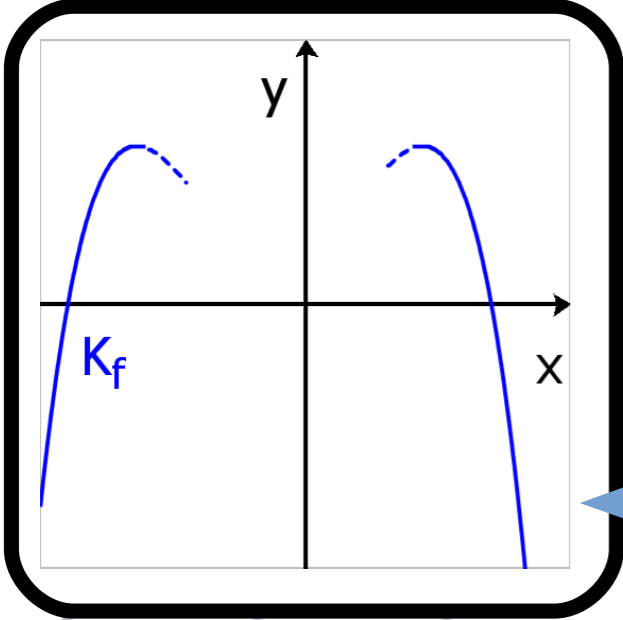


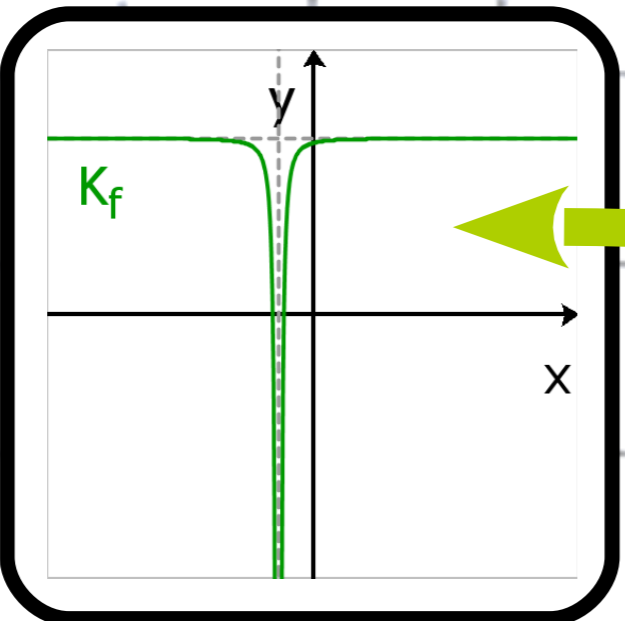
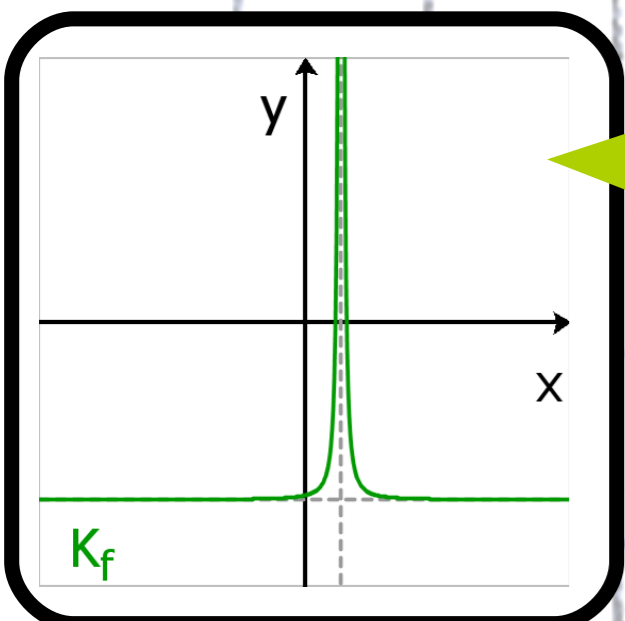
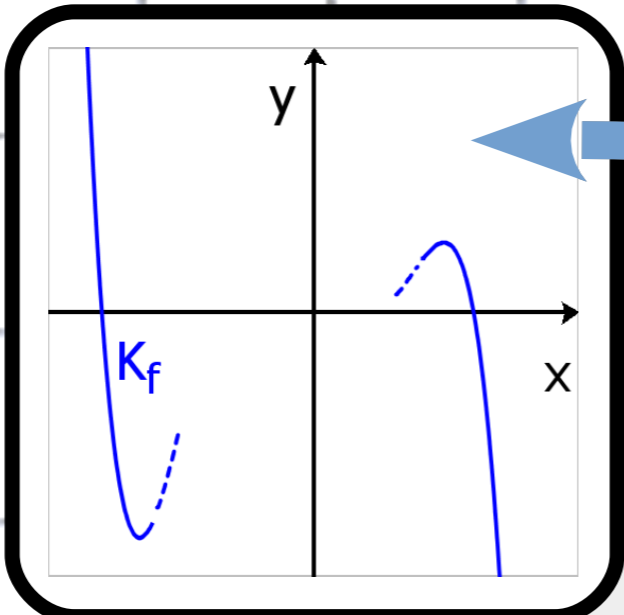
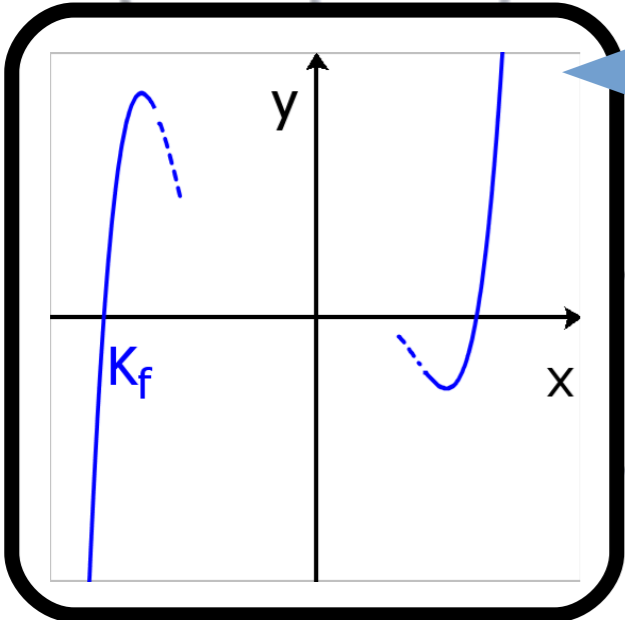


Funktionen, ihre Schaubilder und Gleichungen



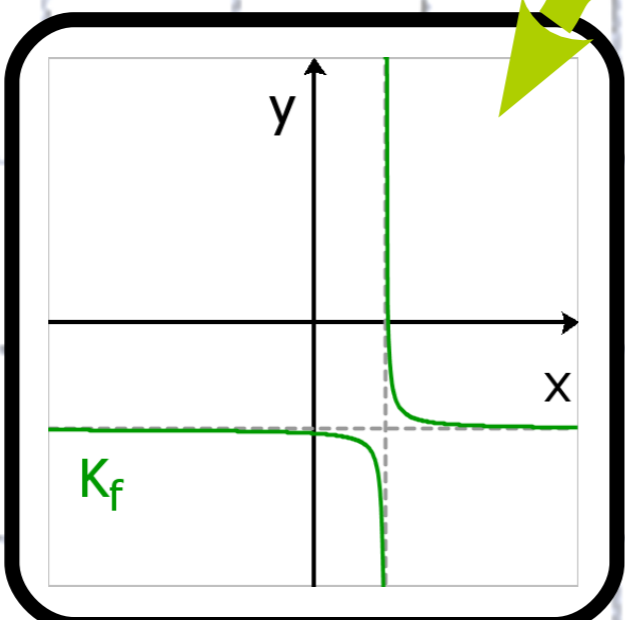
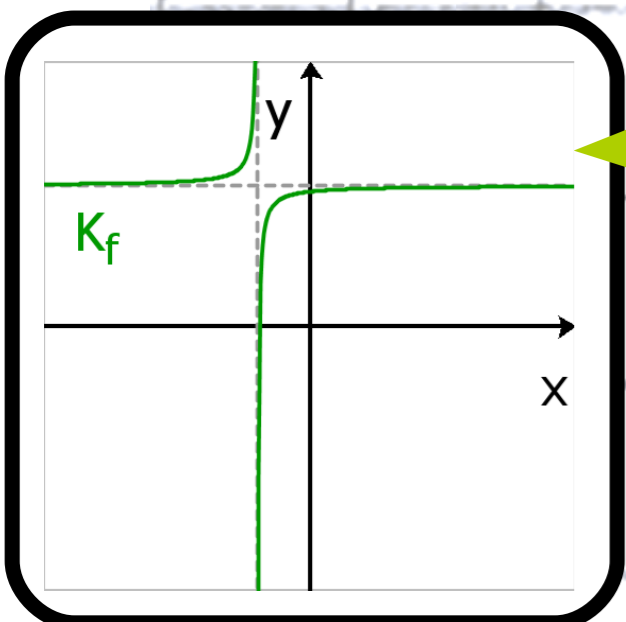
$f(x) = ax^n + bx^{n-1} + \dots + c$:

$a > 0 \wedge n$ ist gerade	$x \rightarrow -\infty \Rightarrow f(x) \rightarrow \infty$	$x \rightarrow \infty \Rightarrow f(x) \rightarrow \infty$
$a < 0 \wedge n$ ist gerade	$x \rightarrow -\infty \Rightarrow f(x) \rightarrow -\infty$	$x \rightarrow \infty \Rightarrow f(x) \rightarrow -\infty$
$a > 0 \wedge n$ ist ungerade	$x \rightarrow -\infty \Rightarrow f(x) \rightarrow -\infty$	$x \rightarrow \infty \Rightarrow f(x) \rightarrow \infty$
$a < 0 \wedge n$ ist ungerade	$x \rightarrow -\infty \Rightarrow f(x) \rightarrow \infty$	$x \rightarrow \infty \Rightarrow f(x) \rightarrow -\infty$



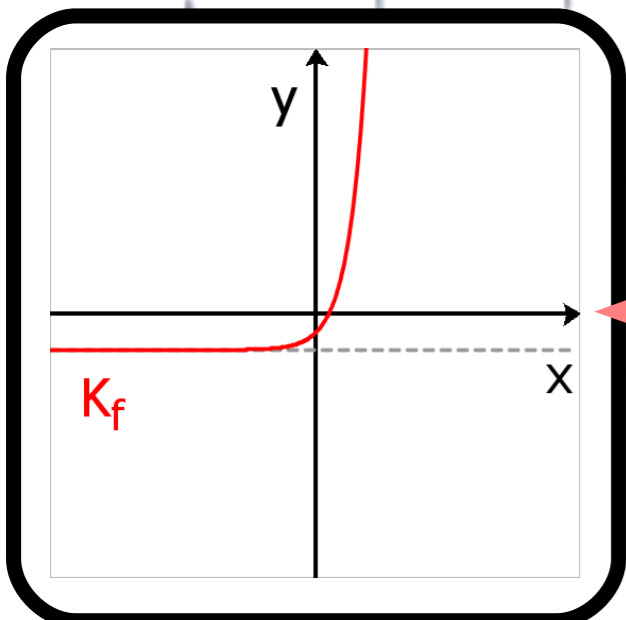
$f(x) = \frac{a}{(x-b)^n} + c$:

$a > 0 \wedge n$ ist gerade	$x \rightarrow \mp \infty \Rightarrow f(x) \rightarrow c$	$x \rightarrow b \Rightarrow f(x) \rightarrow \infty$
$a < 0 \wedge n$ ist gerade	$x \rightarrow \mp \infty \Rightarrow f(x) \rightarrow c$	$x \rightarrow b \Rightarrow f(x) \rightarrow -\infty$
$a > 0 \wedge n$ ist ungerade	$x \rightarrow \mp \infty \Rightarrow f(x) \rightarrow c$	$x \xrightarrow{\text{von links}} b \Rightarrow f(x) \rightarrow -\infty$
		$x \xrightarrow{\text{von rechts}} b \Rightarrow f(x) \rightarrow \infty$
$a < 0 \wedge n$ ist ungerade	$x \rightarrow \mp \infty \Rightarrow f(x) \rightarrow c$	$x \xrightarrow{\text{von links}} b \Rightarrow f(x) \rightarrow \infty$
		$x \xrightarrow{\text{von rechts}} b \Rightarrow f(x) \rightarrow -\infty$



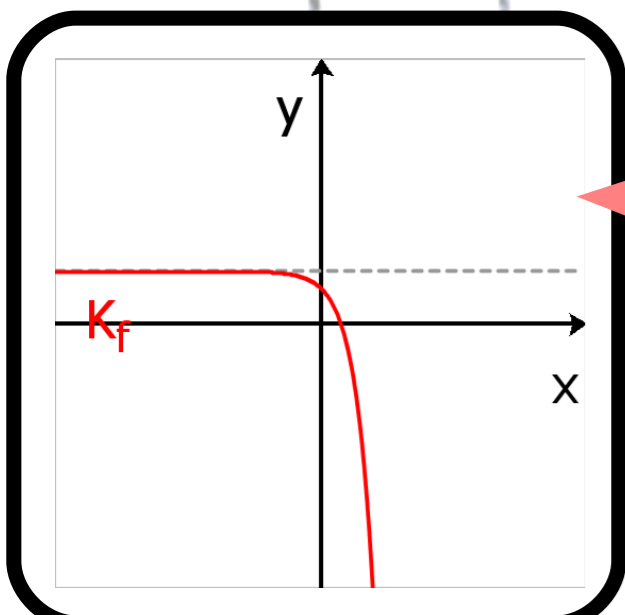
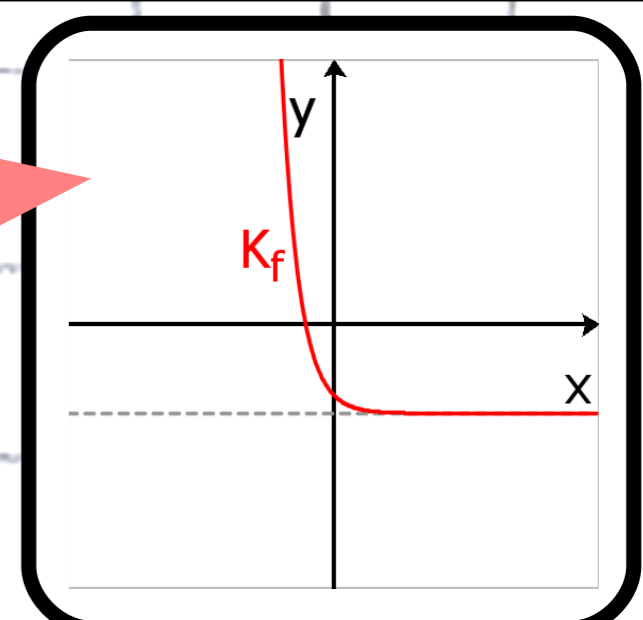
waagerechte Asymptote $y=c$
 senkrechte Asymptote $x=b$
 $x=b$ ist Pohlstelle

globales/lokales Verhalten

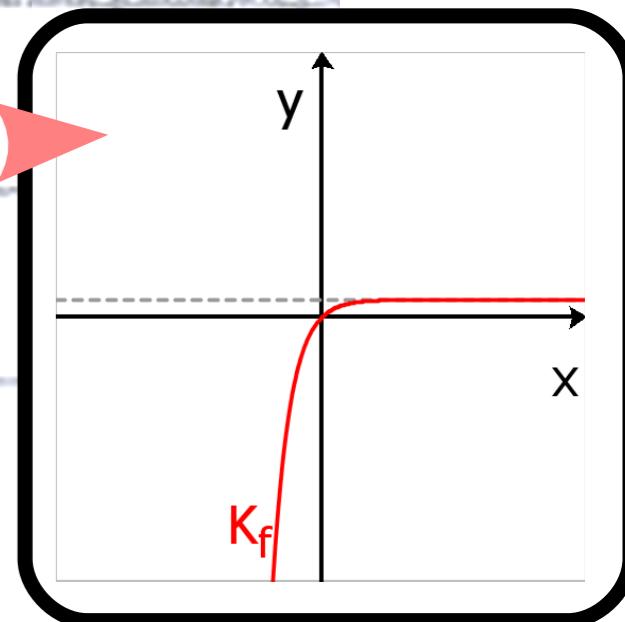


$f(x) = ae^{kx} + c$:

$a > 0 \wedge k > 0$	$x \rightarrow -\infty \Rightarrow f(x) \rightarrow c$	$x \rightarrow \infty \Rightarrow f(x) \rightarrow \infty$
$a < 0 \wedge k > 0$	$x \rightarrow -\infty \Rightarrow f(x) \rightarrow c$	$x \rightarrow \infty \Rightarrow f(x) \rightarrow -\infty$
$a > 0 \wedge k < 0$	$x \rightarrow -\infty \Rightarrow f(x) \rightarrow \infty$	$x \rightarrow \infty \Rightarrow f(x) \rightarrow c$
$a < 0 \wedge k < 0$	$x \rightarrow -\infty \Rightarrow f(x) \rightarrow -\infty$	$x \rightarrow \infty \Rightarrow f(x) \rightarrow c$



waagerechte Asymptote $y=c$
 $f(x) = ae^{kx} + mx + c$
 \Rightarrow schiefe Asymptote $y=mx+c$



Extremstellen