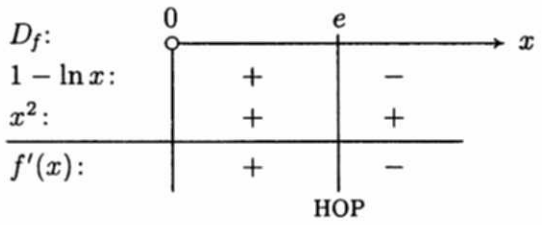
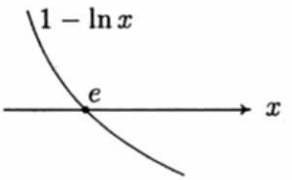
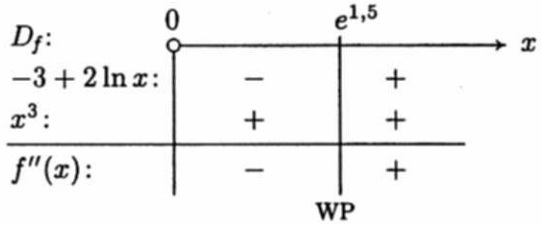
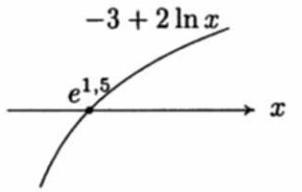
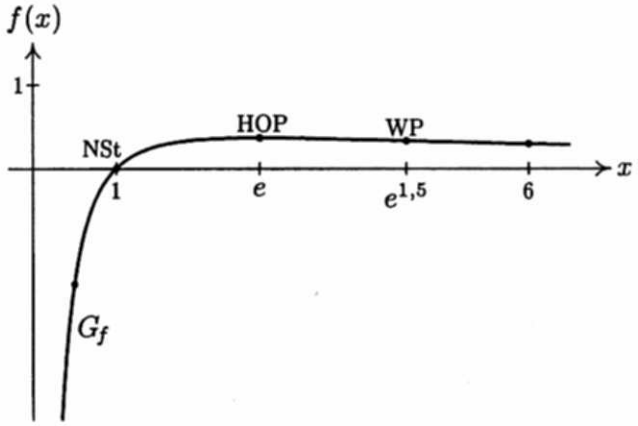
Nr		BE
1.1	$f(x)=\frac{\ln x}{x}$, $D_f=\mathbb{R}^+$, NSt.: $x=1$ $x\to+0 \implies f(x)=\frac{\ln x}{x}\longrightarrow \text{„}\frac{-\infty}{+0}\text{“}\longrightarrow-\infty$; $\lim\limits_{\substack{x\to0\\x>0}} f(x)=-\infty \implies x=0$ vert. A. von G_f $x\to\infty \implies f(x)=\frac{\ln x}{x}\longrightarrow \text{„}\frac{+\infty}{+\infty}\text{“}$ $l'H.\longrightarrow \frac{\frac{1}{x}}{1}=\frac{1}{x}\longrightarrow+0$ $\lim\limits_{x\to\infty} f(x)=0 \implies y=0$ ist horizontale Asymptote von G_f	
1.2	$f'(x)=\frac{x\cdot\frac{1}{x}-(\ln x)\cdot1}{x^2}=\frac{1-\ln x}{x^2}$ $f''(x)=\frac{x^2\cdot\left(-\frac{1}{x}\right)-(1-\ln x)\cdot2x}{x^4}=\frac{-x-2x(1-\ln x)}{x^4}=\frac{-3x+2x\ln x}{x^4}=\frac{-3+2\ln x}{x^3}$	
1.3	**Monotonie:** $f'(x)=0$: $1-\ln x=0 \iff \ln x=1 \iff x=e$, $f(e)=\frac{\ln e}{e}=\frac{1}{e}$   f streng monoton zunehmend in $]0;e]$ und streng monoton abnehmend in $[e;\infty[$ $\implies$ $H(e\mid\frac{1}{e})$ Hochpunkt	
1.4	**Krümmung:** $f''(x)=0$: $-3+2\ln x=0 \iff 2\ln x=3 \iff \ln x=\frac{3}{2}=1{,}5 \iff x=e^{1{,}5}$ $f(e^{1{,}5})=\frac{\ln(e^{1{,}5})}{e^{1{,}5}}=\frac{1{,}5}{e^{1{,}5}}$   G_f rechtsgekrümmt in $]0;e^{1,5}]$ und linksgekrümmt in $[e^{1,5};\infty[$ $\implies W(e^{1,5}\mid\frac{1,5}{e^{1,5}})$ Wendepunkt	
1.5