Differentiating Distributions

$T(x)$	$T'(x)$
A C^1 function $f(x)$	$f'(x)$
$\chi_{[a,b]}(x)$	$\delta(x-a)-\delta(x-b)$
A piecewise C^1 function $T(x)=\begin{cases} f(x), x<a \\ g(x), x>a \end{cases}$	$(g(a^+)-f(a^-))\,\delta(x-a)$ $+\quad \begin{cases} f'(x), x<a \\ g'(x), x>b \end{cases}$
$f*T$	$f'*T=f*T'$