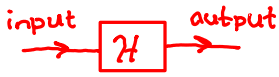
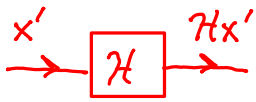
Example 2.7. For a system operator $\mathcal{H}$, function x', and real number t, the expression $\mathcal{H}x'(t)$ denotes result of taking the function y produced as the output of the system $\mathcal{H}$ when the input is the function x' and then evaluating y at t. ■

$\mathcal{H}$ is a system.



$\mathcal{H}x'$ is the output of the system $\mathcal{H}$ when the input is x'.

$\mathcal{H}x'$: function; x': function



Since $\mathcal{H}x'$ is a function, we can evaluate it at a point such as t.

$\mathcal{H}x'(t)$: number

$\mathcal{H}x'$: function; t: point at which function is evaluated