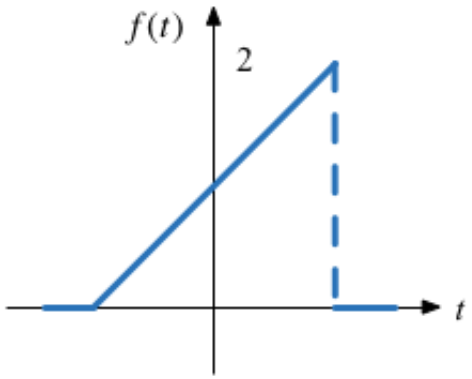
# Review of Homework 1

Consider a signal

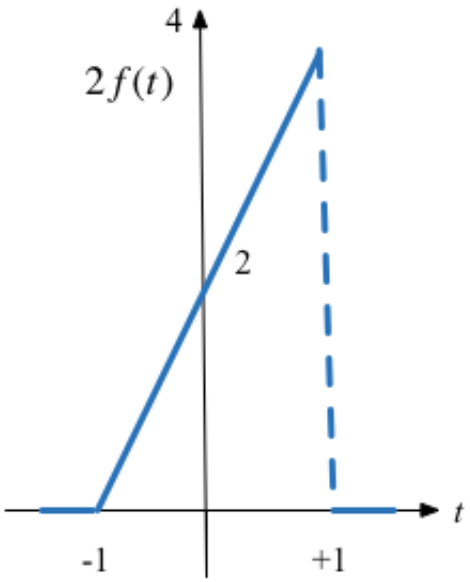
$$x = f(t) = \begin{cases} 0 & : \ t < -1 \\ t+1 & : \ -1 \le t \le 1 \\ 0 & : \ t > 1 \end{cases}$$

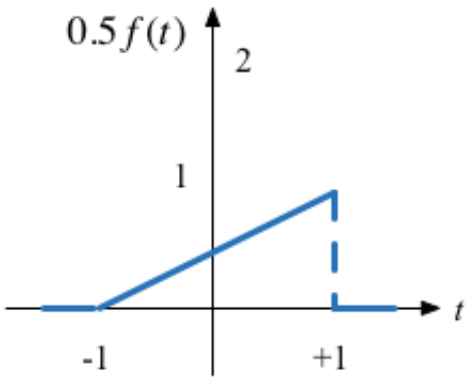
Sketch this signal



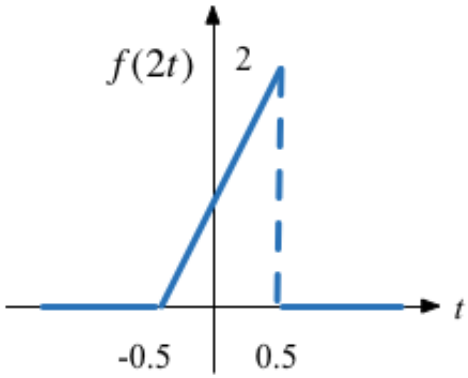

plot the effect on this signal of applying the following basic signal operations

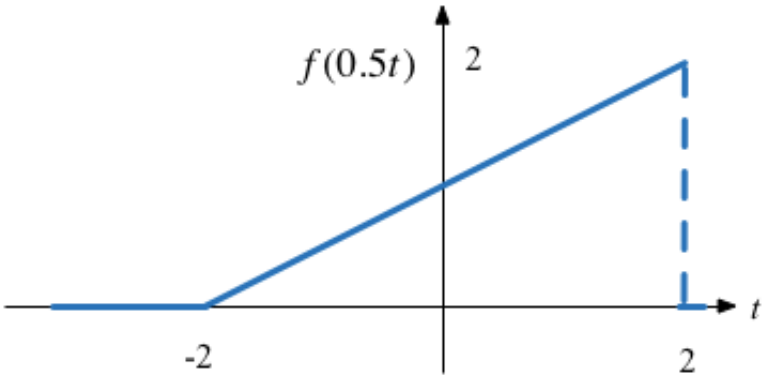
## Amplitude scaling



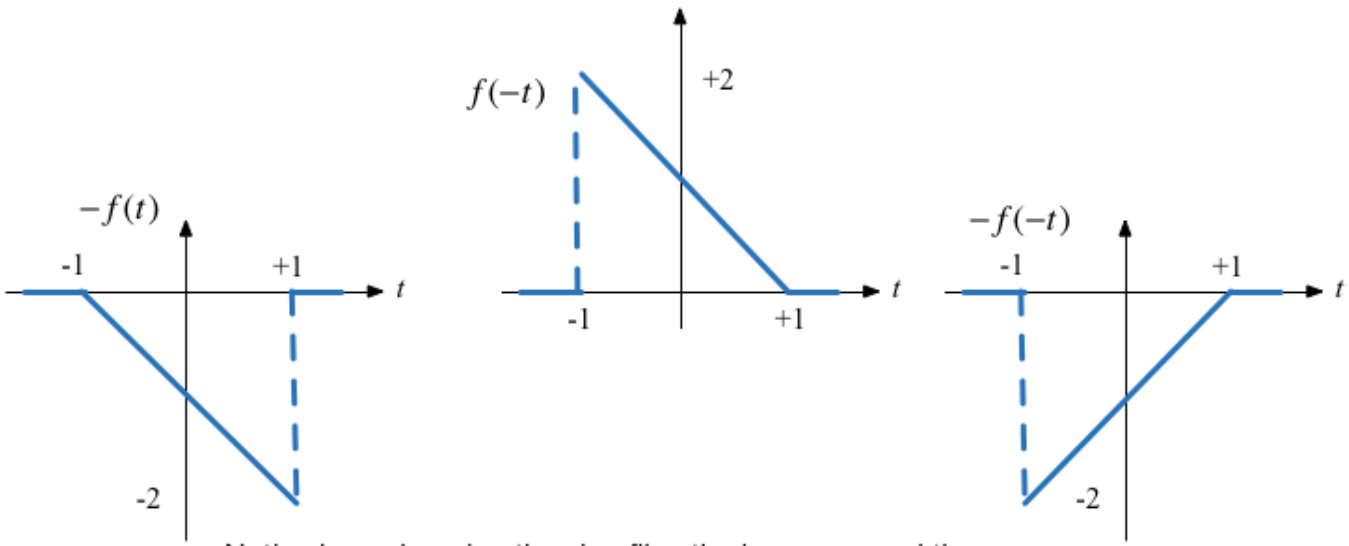




## Time scaling



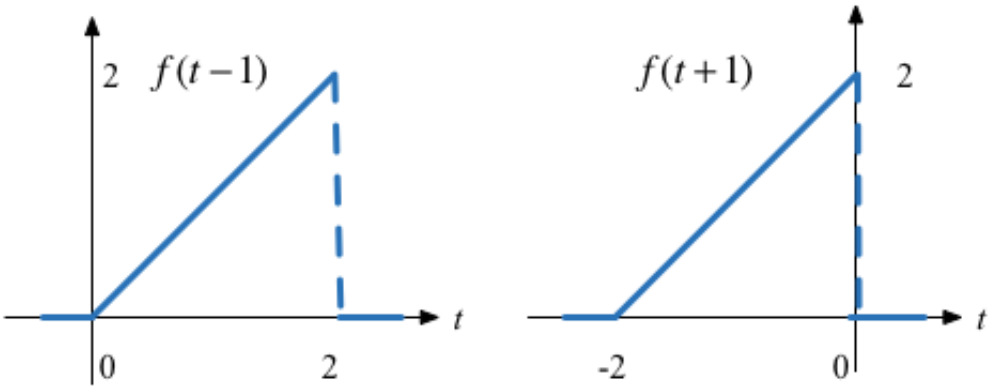




## Mirroring




Notice how changing the sign flips the image around the axes

## Time shifting - delay and advance




## Exercise

We leave the solution of $-2f(-t+2)$ as an exercise for the reader but note that it involves *amplitude scaling*, *amplitude mirroring*, *time mirroring*, and a *time shift*. Each operation can be performed in sequence in any order.