Homework 4: due 02/09/18
EE 324: Signals and Systems II

## 1 Laplace unilateral transform

1. $x(t)=e^{-t+1} u(t)$
2. $x(t)=e^{-t+1} u(t-1)$
3. $x(t)=e^{-t+1} \sin (t-1) u(t)$
4. $x(t)=e^{-t+1} \sin (t-1) u(t-1)$
5. $x(t)=t^{2} \sin \left(\frac{\pi}{3} t\right)$

## 2 Transfer functions

Compute the transfer functions of the following systems

1. Input: $v$, output: voltage of $C$
2. Input: $v$, output: current of $R$

3. Input: $v$, output: voltage of $L$
4. Input: $v$, output: voltage of $C$

5. Input: $v$, output: voltage of $R_{2}$
6. Input: $v$, output: voltage of $C$

