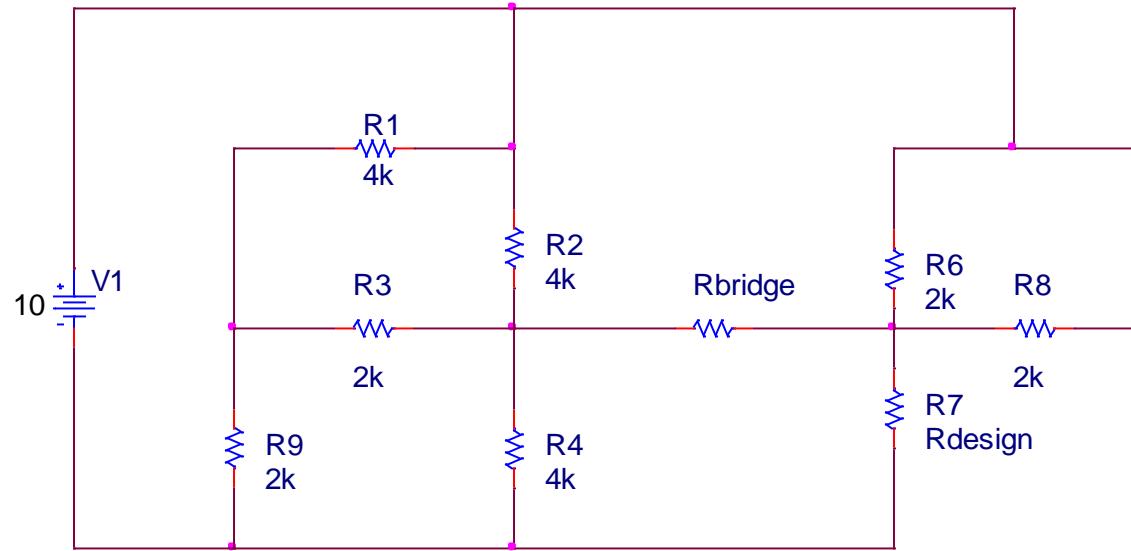
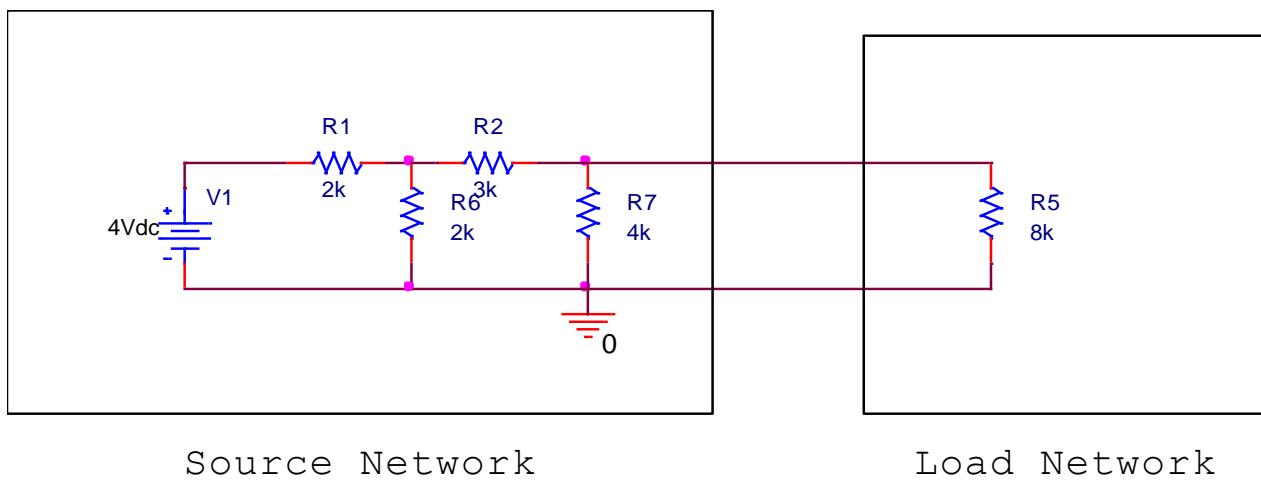


### Silly bridge circuit



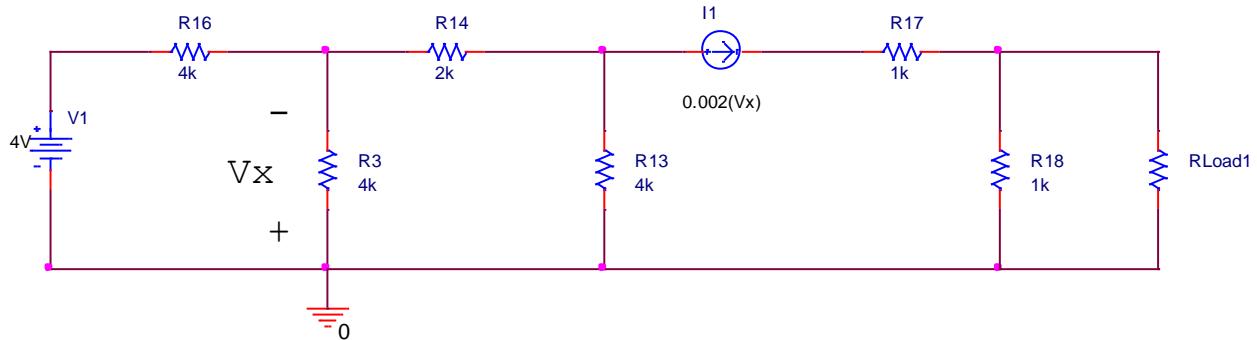
- a) Find  $R_{\text{design}}$  such that no current goes through  $R_{\text{bridge}}$  ( $R_{\text{design}} = 0.778k$ )

### Source Transformations , Thevenin Circuits, Power Transfer

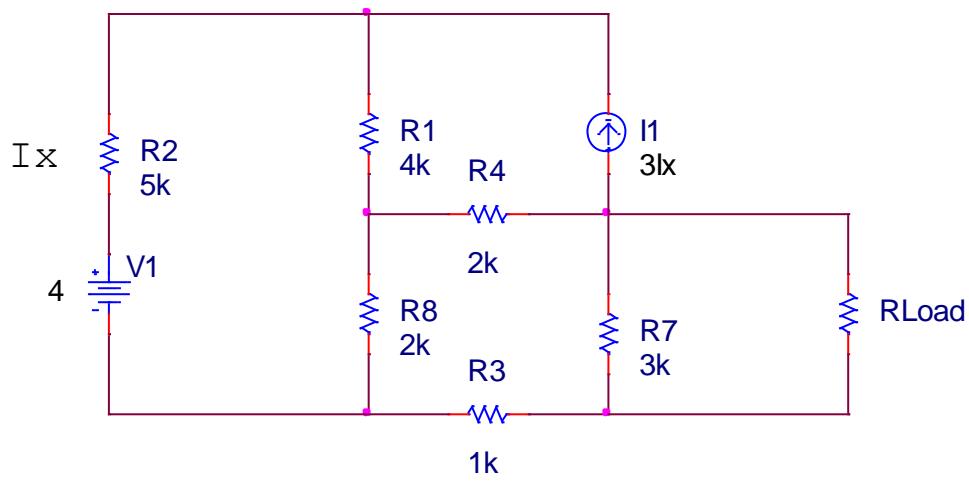


- a) Find  $V_{\text{opencircuit}}$  ( $V_{\text{Thevenin}}$ ) ( $V_{\text{oc}} = 1V$ )  
 b) Find  $I_{\text{shortcircuit}}$  ( $I_{\text{Norton}}$ ) ( $I_{\text{sc}} = 0.5\text{mA}$ )  
 c) Find  $R_{\text{Thevenin}}$  ( $R_{\text{TH}} = 2\text{k}\Omega$ )  
 d) Is it possible to change  $R_7$  such that maximum power is delivered to  $R_5$ ?

## Thevenin Equivalence – Dependent Sources



- Find  $V_{open\ circuit}$  ( $V_{Thevenin}$ ) (*Answer  $V_{oc} = 3V$* )
- Find  $I_{short\ circuit}$  ( $I_{Norton}$ ) (*Answer  $I_{sc} = 3mA$* )
- Find  $R_{Thevenin}$  using a test voltage source (*Answer  $R_{TH} = 1k\Omega$* )



- Find  $V_{open\ circuit}$  ( $V_{Thevenin}$ ) (*Answer  $V_{oc} = -4V$* )
- Find  $I_{short\ circuit}$  ( $I_{Norton}$ ) (*Answer  $I_{sc} = -1.52mA$* )
- Find  $R_{Thevenin}$  using a test voltage source (*Answer  $R_{TH} = 2.63k\Omega$* )