# Greining og uppbygging rása

Reikniverkefni 1
Kristinn Gylfason

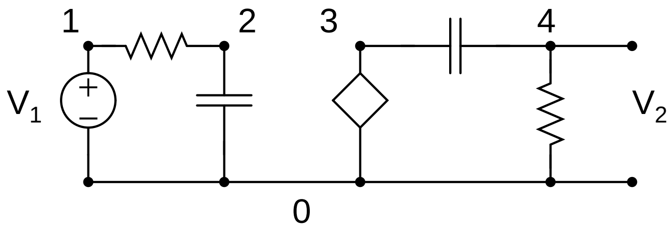
14. febrúar 2000

## Dæmi 1

Teikna á Bode-myndir (stærð og fasa) fyrir spennumögnunina $v_2/v_1$ frá 100 Hz upp í 100 kHz í rásinn á mynd 1.

## Lausn

SPICE rása- og úttaksskrárnar fylgja í viðauka. Mynd 1 sýnir rásina þar sem sést hvernig hnútpunktar eru númeraðir. Myndir 2 og 3 sýna stærðina annars vegar og fasann hins vegar á spennumögnuninni $v_2/v_1$ eins og um var beðið.




Mynd 1: Númmering hnútpunkta í rásinni.

## Dæmi 2

Nota á gefinn púls, sem er línulegur á köflum, sem innmerki $v_1$ og skoða hvernig $v_2$ breytist fyrstu fjórar millisekúndurnar.

## Lausn

SPICE rása- og úttaksskrárnar fylgja í viðauka og mynd 4 sýnir útspennuna $v_2$ eins og um var beðið.

# SPICE-skrár

```
reikn1a

VI 1 0 AC 1 0
R1 1 2 1K
C1 2 0 .1U
H1 0 3 VI 300
C2 3 4 .1U
R2 4 0 1K

.AC DEC 10 100 100K
.PROBE

.END
```

```
**** 02/14/100 13:37:51 ******** NT Evaluation PSpice (April 1996) ***********

 reikn1a


 ****     CIRCUIT DESCRIPTION


******************************************************************************




VI      1       0       AC      1       0
R1      1       2       1K
C1      2       0       .1U
H1      0       3       VI      300
C2      3       4       .1U
R2      4       0       1K

.AC     DEC     10 100 100K
.PROBE
```

```
.END

**** 02/14/100 13:37:51 ******** NT Evaluation PSpice (April 1996) ***********

 reikn1a

 ****     SMALL SIGNAL BIAS SOLUTION       TEMPERATURE =   27.000 DEG C

******************************************************************************


 NODE   VOLTAGE     NODE   VOLTAGE     NODE   VOLTAGE     NODE   VOLTAGE


(    1)    0.0000  (    2)    0.0000  (    3)    0.0000  (    4)    0.0000




    VOLTAGE SOURCE CURRENTS
    NAME         CURRENT

    VI           0.000E+00

    TOTAL POWER DISSIPATION   0.00E+00  WATTS



          JOB CONCLUDED

          TOTAL JOB TIME            .08

**** 02/14/100 13:37:51 ******** NT Evaluation PSpice (April 1996) ***********
```

```
 ****     CIRCUIT DESCRIPTION

******************************************************************************



WARNING -- There are no devices in this circuit, (this message will be printed
if there are blank lines after the last .END statement)


reikn1b

VI 1 0 PWL(0M 0, 0.1M 1, 2M 1, 2.1M 0, 4M 0)
R1 1 2 1K
C1 2 0 .1U
H1 0 3 VI 300
C2 3 4 .1U
R2 4 0 1K

.TRAN .01M 4M UIC
.PROBE

.END


**** 02/14/100 13:37:51 ******** NT Evaluation PSpice (April 1996) ***********

 reikn1a


 ****     CIRCUIT DESCRIPTION


******************************************************************************
```

```
VI      1       0       AC      1       0
R1      1       2       1K
C1      2       0       .1U
H1      0       3       VI      300
C2      3       4       .1U
R2      4       0       1K

.AC     DEC     10 100 100K
.PROBE

.END


**** 02/14/100 13:37:51 ******** NT Evaluation PSpice (April 1996) ***********

 reikn1a


 ****     SMALL SIGNAL BIAS SOLUTION       TEMPERATURE =   27.000 DEG C


******************************************************************************



 NODE   VOLTAGE     NODE   VOLTAGE     NODE   VOLTAGE     NODE   VOLTAGE


(    1)    0.0000  (    2)    0.0000  (    3)    0.0000  (    4)    0.0000




    VOLTAGE SOURCE CURRENTS
    NAME         CURRENT

    VI           0.000E+00

    TOTAL POWER DISSIPATION   0.00E+00  WATTS
```

```
          JOB CONCLUDED

          TOTAL JOB TIME             .08

**** 02/14/100 13:37:51 ******** NT Evaluation PSpice (April 1996) ***********


 ****     CIRCUIT DESCRIPTION

******************************************************************************


WARNING -- There are no devices in this circuit, (this message will be printed
if there are blank lines after the last .END statement)
```