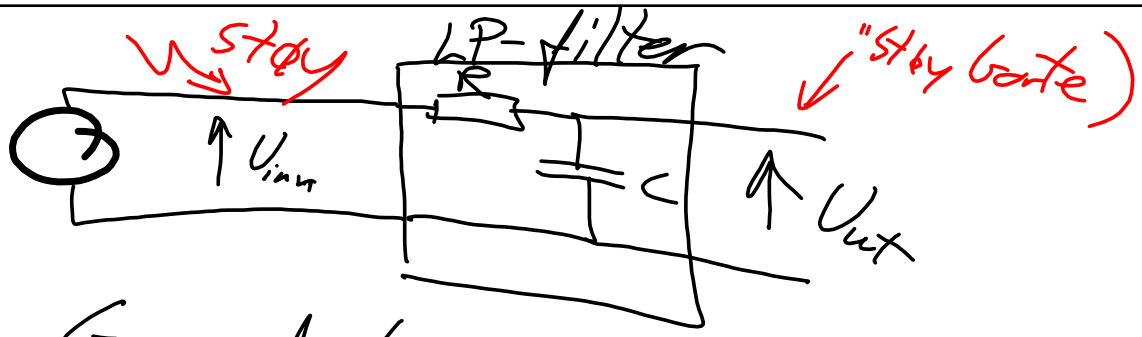


Grensefrekvens må du bestemme gitt av den høyeste frekvensen du har i signal $\Rightarrow f_{støy}$

$f_g \geq 10 \cdot f_{støy}$

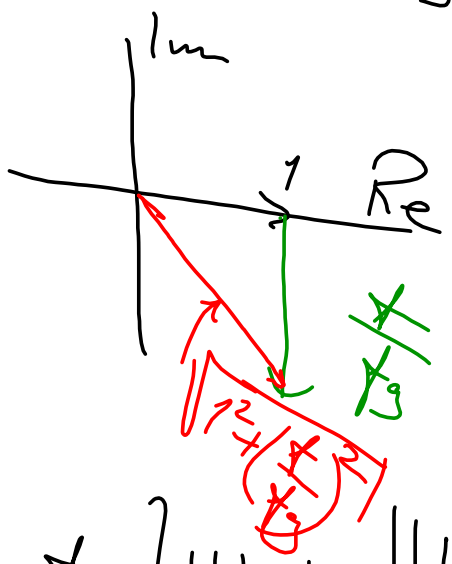
→ Beregner R og C

regner

velger

ut

$$\frac{U_{ut}}{V_{inn}} = \frac{1}{1 + j\left(\frac{f}{f_g}\right)} \qquad \left|\frac{U_{ut}}{V_{inn}}\right| = \frac{1}{\sqrt{1^2 + \left(\frac{f}{f_g}\right)^2}}$$



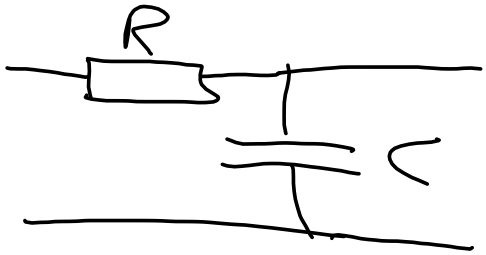
$20 \cdot \lg\left|\frac{U_{ut}}{V_{inn}}\right| = X$ dB

$f_g = 2000$ Hz

$\frac{f}{f_g}$	$\left\|\frac{U_{ut}}{V_{inn}}\right\|$ [gr]	$\frac{U_{ut}}{V_{inn}}$ [dB]	ϕ [°]	f [Hz]
0,01	0,99995	$-4,3 \cdot 10^{-4}$ → 0,0		200
0,1	0,995	−0,04 → −0,0		600
0,3	0,95	−0,4		1000
0,5	0,89	−1,0		1400
0,7	0,82	−1,7		2000
1,0	0,71	−3,0		4000
2,0	0,45	−7,0		10000
5,0	0,20	−14,1		20000
10,0	0,10	−20,0		

y-akse

f-skalaer (x-aksen)



$$f_g = \frac{1}{2\pi C \cdot R} = 2000$$

$$R = \frac{1}{2\pi \cdot C \cdot f_g} = \frac{1}{2\pi \cdot 22 \cdot 10^{-9} \cdot 2{,}0 \cdot 10^{3}}$$

$$= 3{,}6\ k\Omega$$