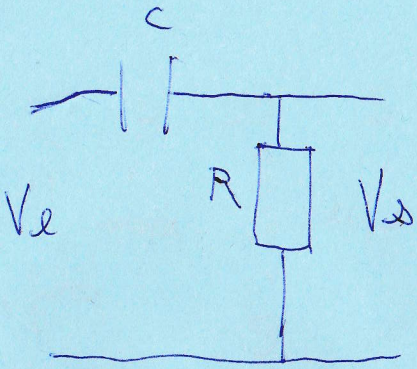

~~$G = \sqrt{1+(RC\omega)^2}$~~

~~$G = 20\log\left(\sqrt{1+(RC\omega)^2}\right)$~~

$$G = 20\log\left(\frac{RC\omega}{1+RC\omega}\right)$$

~~$20\log\left(\frac{RC\omega}{1+RC\omega} / RC\omega\right)$~~

$$Vs = Ve\,\frac{R}{R+Zc}$$

$$Vs = \frac{Ve}{1+\frac{Zc}{R}}$$

$$Vs = \frac{Ve}{1+\frac{1}{RjC\omega}}$$

$$fc = \frac{1}{2\pi RC}$$

$$R = \frac{1}{2\pi C\, fc}$$

$$Vs + Vs\,\frac{1}{RjC\omega} = Ve$$

$$H = \frac{Vs}{Ve} = \frac{Vs}{Vs+Vs\frac{1}{RjC\omega}} = \frac{Vs}{Vs+Vs\frac{1}{RjC\omega}}$$

$$= RjC\omega$$

$$= \frac{1}{1+\frac{1}{RjC\omega}} = 1+RjC\omega$$

$$= \frac{1}{\frac{1+RjC\omega}{RC\omega}} = \frac{RjC\omega}{1+RjC\omega}$$

$$|H| = \frac{\sqrt{(RC\omega)^2}}{\sqrt{1+(RC\omega)^2}}$$

$$\frac{RC\omega}{\sqrt{1+(RC\omega)^2}} = \frac{1}{\sqrt{2}}$$

$$\frac{(RC\omega)^2}{1+(RC\omega)^2} = \frac{1}{2}$$

$$2(RC\omega)^2 = 1+(RC\omega)^2$$

$$RC\omega = 1$$

$$\omega = \frac{1}{RC}$$

$$\omega = 2\pi f$$

$$f = \frac{1}{2\pi RC}$$

la coupure est à -3dB

donc $\frac{1}{\sqrt{2}}$

$20\log\left(\frac{1}{\sqrt{2}}\right) = -3dB$

$\lambda = \frac{c}{f}$

$\omega = \frac{2\pi}{T}$

donc $\varphi = \omega \times \tau$

$\varphi = \pm d$