# Esercizi

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## 1 Complessi

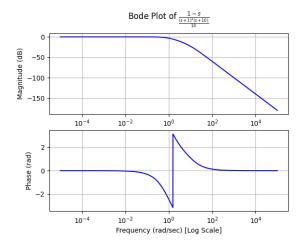
- $2^{(a+ib)} = 2^a(\cos(b\ln(2)) + i\sin(b\ln(2)))$
- $3^{(a+ib)} = 3^a(\cos(b\ln(3)) + i\sin(b\ln(3)))$
- $e^{(a+ib)} = e^a(\cos(b)) + i\sin(b)$
- $\alpha^{(a+ib)} = e^{\alpha}(\cos(b)\ln(\alpha)) + i\sin(b\ln(\alpha))$

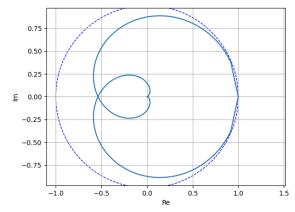
## 2 Esercizi

#### **2.1** 1-s

Il grafico di bode è:

$$W(s) = \frac{1 - s}{\frac{(s+1)^2(s+10)}{10}}$$





Il grafico di Nyquist è: continuo è

nel tempo

$$\frac{10\left(\left(18t-11\right)e^{9t}+11\right)e^{-10t}\theta\left(t\right)}{81}$$