

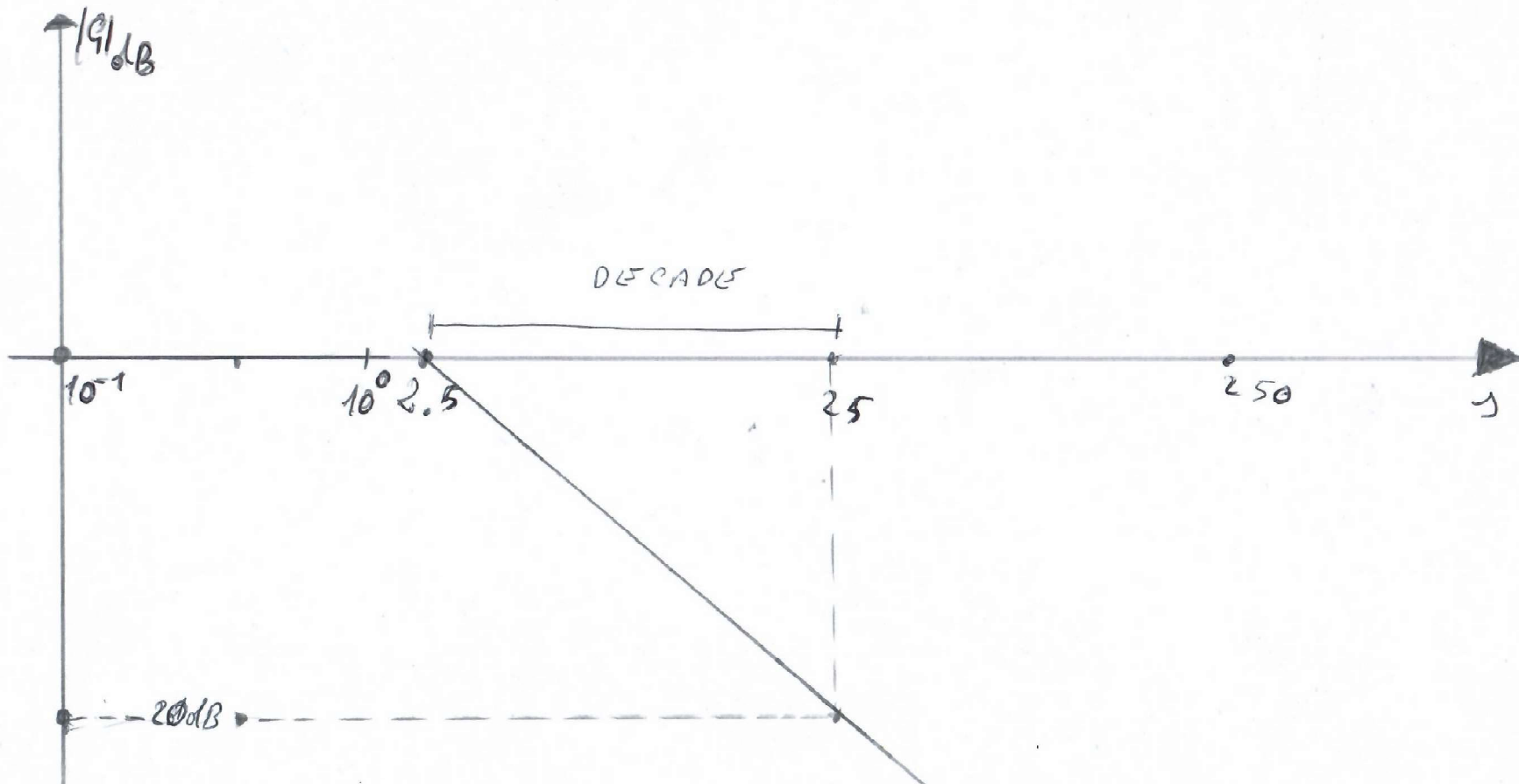
$$G(s) = \frac{1}{1 + 0,4s}$$

POLO

$$s = -\frac{1}{0,4} = -2,5$$

$$|s| = 2,5$$

$$|G(s)|_{dB} = -20 \lg |1 + 0,4s|$$





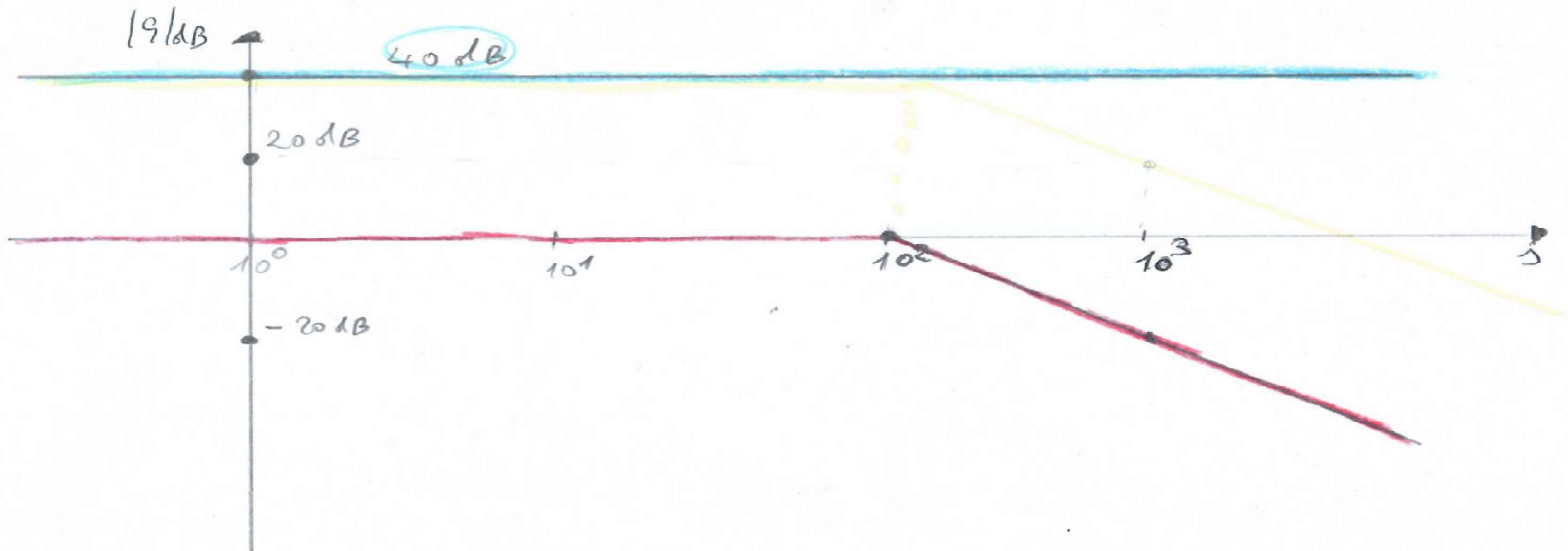
$$G(s) = \frac{100}{1 + 0.01s}$$

$$20 \lg(100) = 20 \cdot 2 = 40 \text{ dB}$$

$$|G|_{\text{dB}} = 20 \lg(100) - 20 \lg|1 + 0.01s|$$

$$\text{POLO: } 1 + 0.01s = 0 \quad s = \frac{-1}{0.01} = -100$$

$$|s| = 100$$





$$G(s) = \frac{200(1+0.4s)}{(1+0.05s)(1+200s)}$$

$$|G(s)|_{dB} = 20 \log(200) + 20 \log|1+0.4s| +$$

$$- 20 \log|1+0.05s| - 20 \log|1+200s|$$

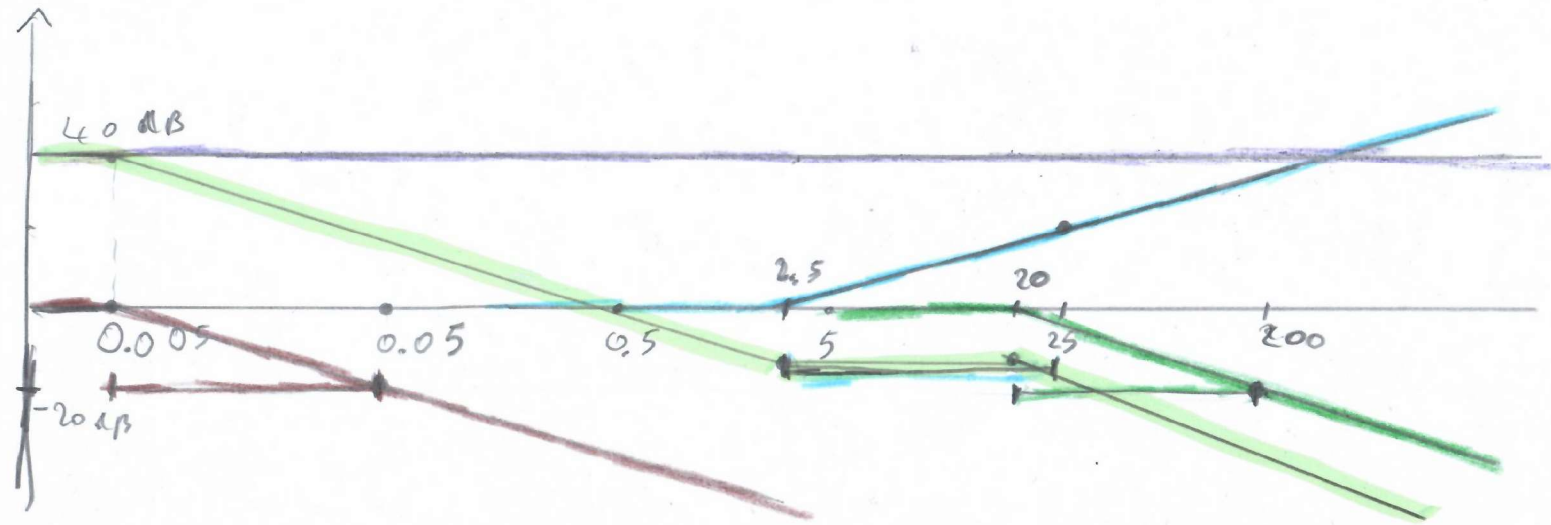
$$20 \log 200 \approx 40 \text{ dB}$$

Poles:  $s = -\frac{1}{0.05}$      $s = -\frac{1}{200}$

$$|s| = \frac{1}{0.05} = 20$$

$$|s| = \frac{1}{200} = 0.005$$

Zeros:  $s = -\frac{1}{0.4}$      $|s| = \frac{1}{0.4} = 2.5$



Esercizio

calcolare poli, zeri, modulo e sfasamento delle seguenti funzioni di trasferimento e riportare il grafico del modulo:

$$G(s) = \frac{1 + 0.2s}{1 + 200s}; G(s) = \frac{1000(1 + 0.8s)}{(1 + 500s)}$$