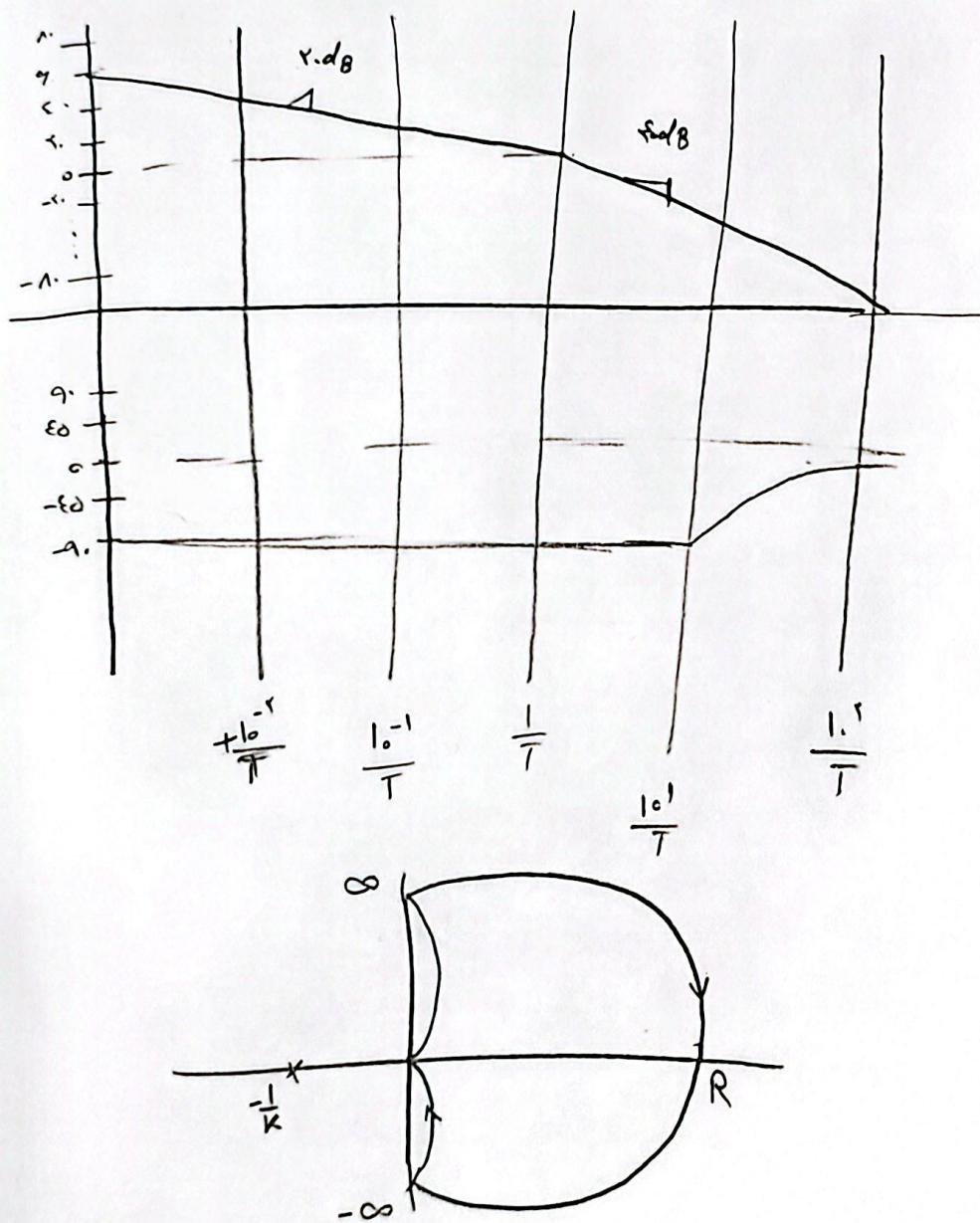


$$L(s) = \frac{1}{s(Ts - 1)} = \frac{1}{j\omega(jTw - 1)}$$

$$= \frac{1}{-Tw - j\omega} \quad \text{و} L(s) \text{ معنوي} = \tan^{-1}\left(\frac{\omega}{Tw}\right) = \tan^{-1}\left(\frac{1}{Tw}\right)$$

مهم \rightarrow $\omega \rightarrow \infty$ مهم $\rightarrow L \rightarrow -\infty = \infty \log(|L(\omega)|) \rightarrow L(j\omega) = 0$

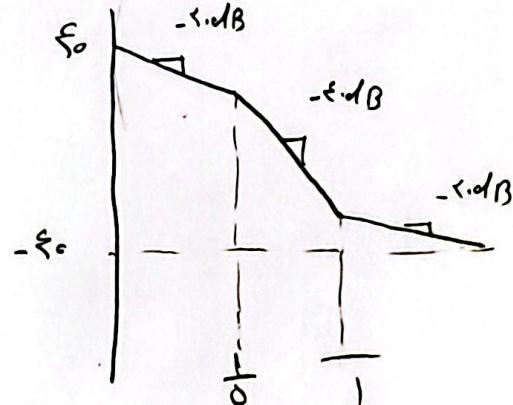
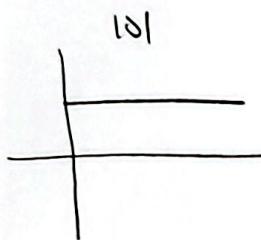
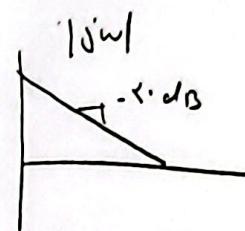
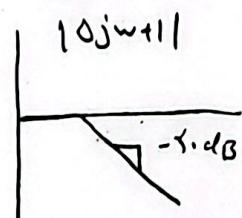
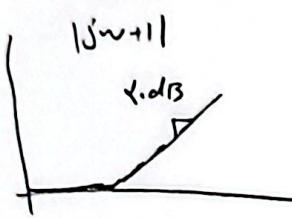


الخطوة الأولى: $Z=1 \leftarrow N=0 \leftarrow -\frac{1}{k} < 0$
 الخطوة الثانية: $Z=2 \leftarrow N=1 \leftarrow \frac{1}{k} > 0$

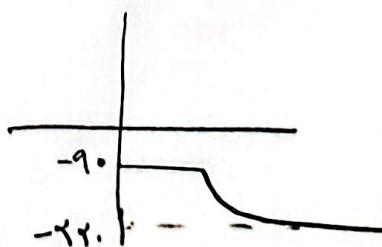
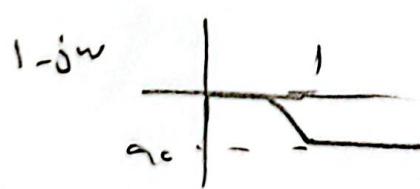
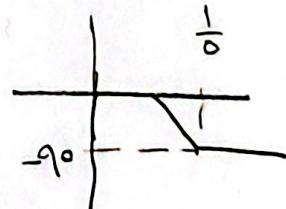
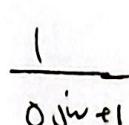
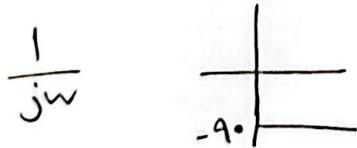
$$ess_{\infty} : \frac{1}{kv}, \text{ kv s } \lim_{s \rightarrow 0} sL(s) = \frac{|l|}{l_0}, \text{ } l/|l|$$

$$\rightarrow \frac{1}{\gamma_{11}} = 9,09 = e_{ss} \text{ mit } , \quad e_{ss_{\alpha}} = 0$$

$$(t + 1, 1 \cdot u(t))_{C_{SS}} = 0 + 9,09 = \boxed{9,09}$$



$$e^{-s} > \frac{e^{-s}}{e^s} > \frac{1-s}{1+s}$$



Command Window

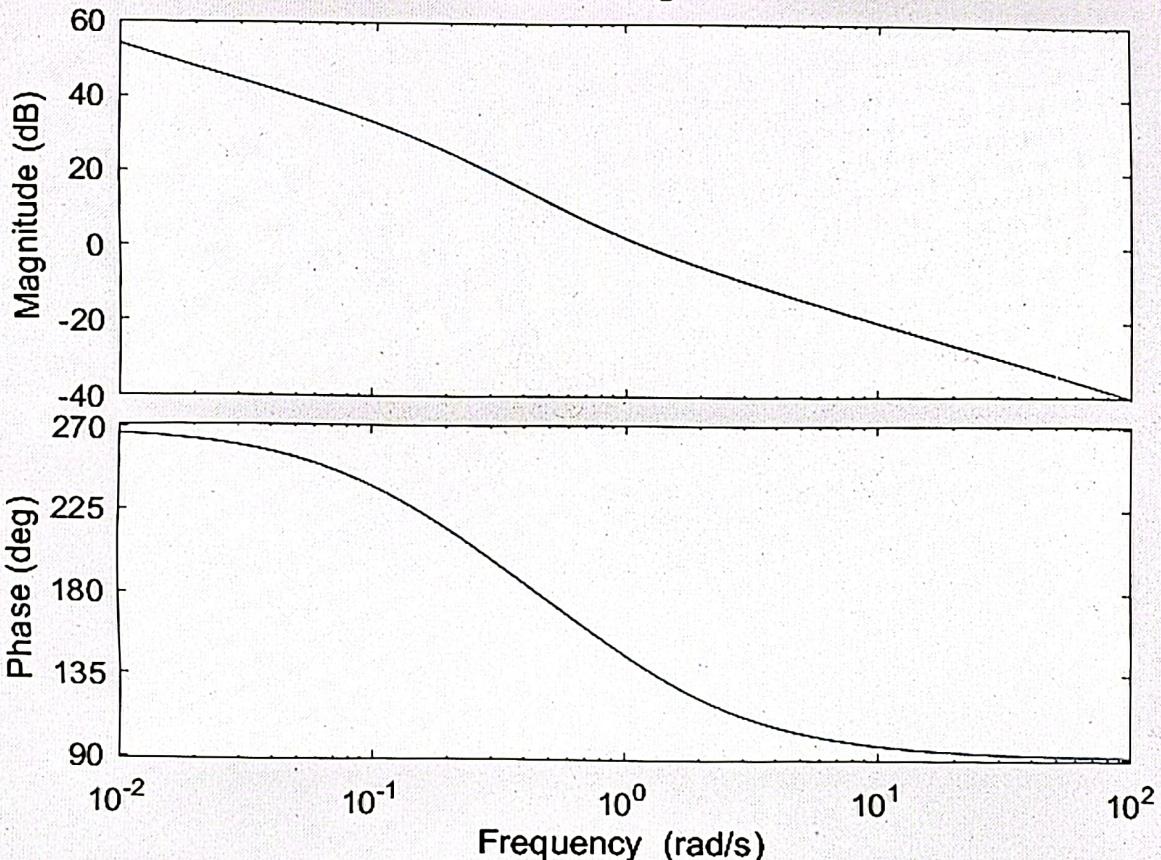
```
>> clear;
s = tf('s');

T = 2; % سایت زمانی %
N = 1; % مرتبه تقریب %

sys = (5 * (s + 1) / (5 * s + 1)) / s;
[num, den] = pade(T, N);
sys_pade = tf(num, den);
sys_combined = sys * sys_pade;

bode(sys_combined)
fx >>
```

Bode Diagram

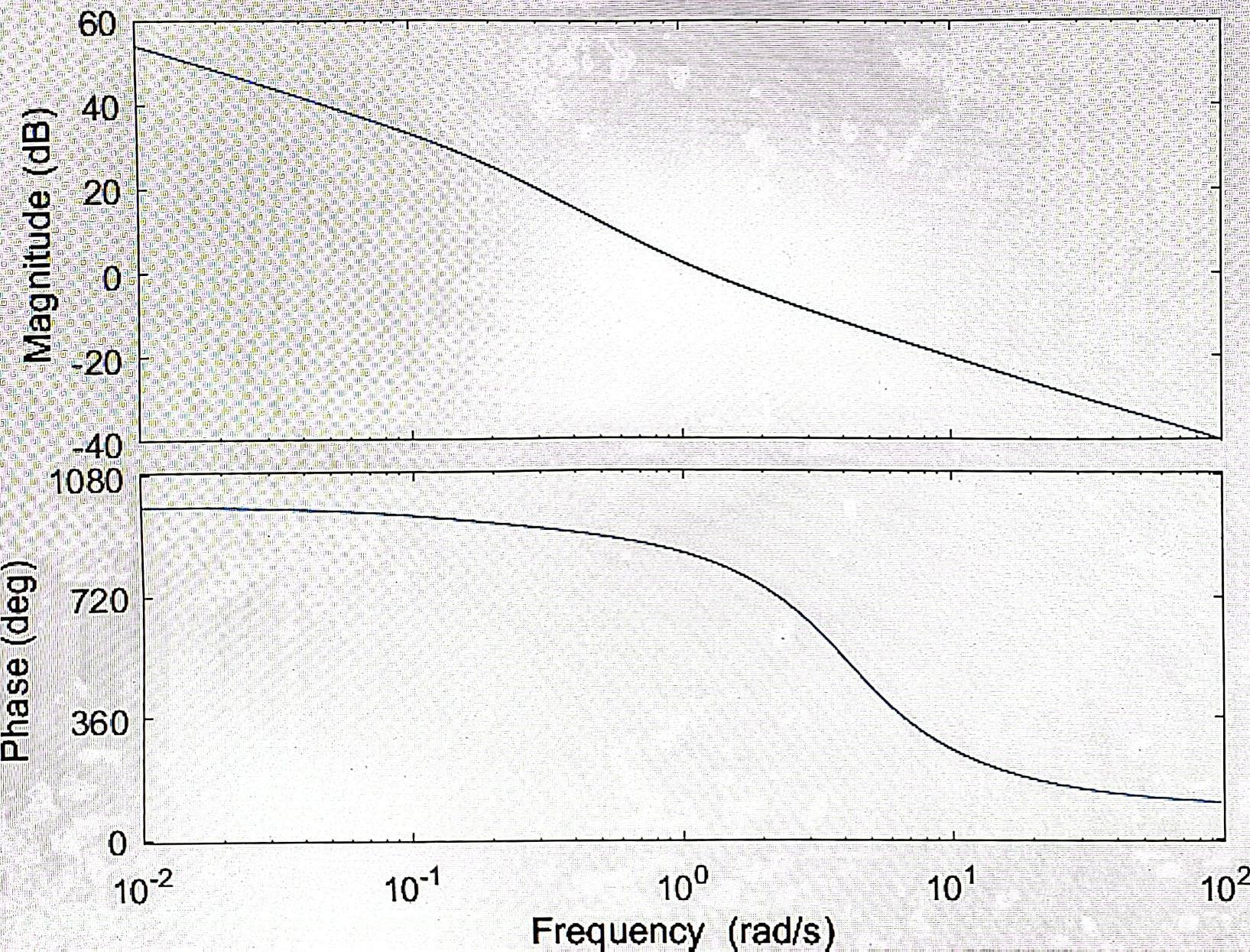


File Edit View Insert Tools Desktop Window Help



تقريب مرتبه ۵

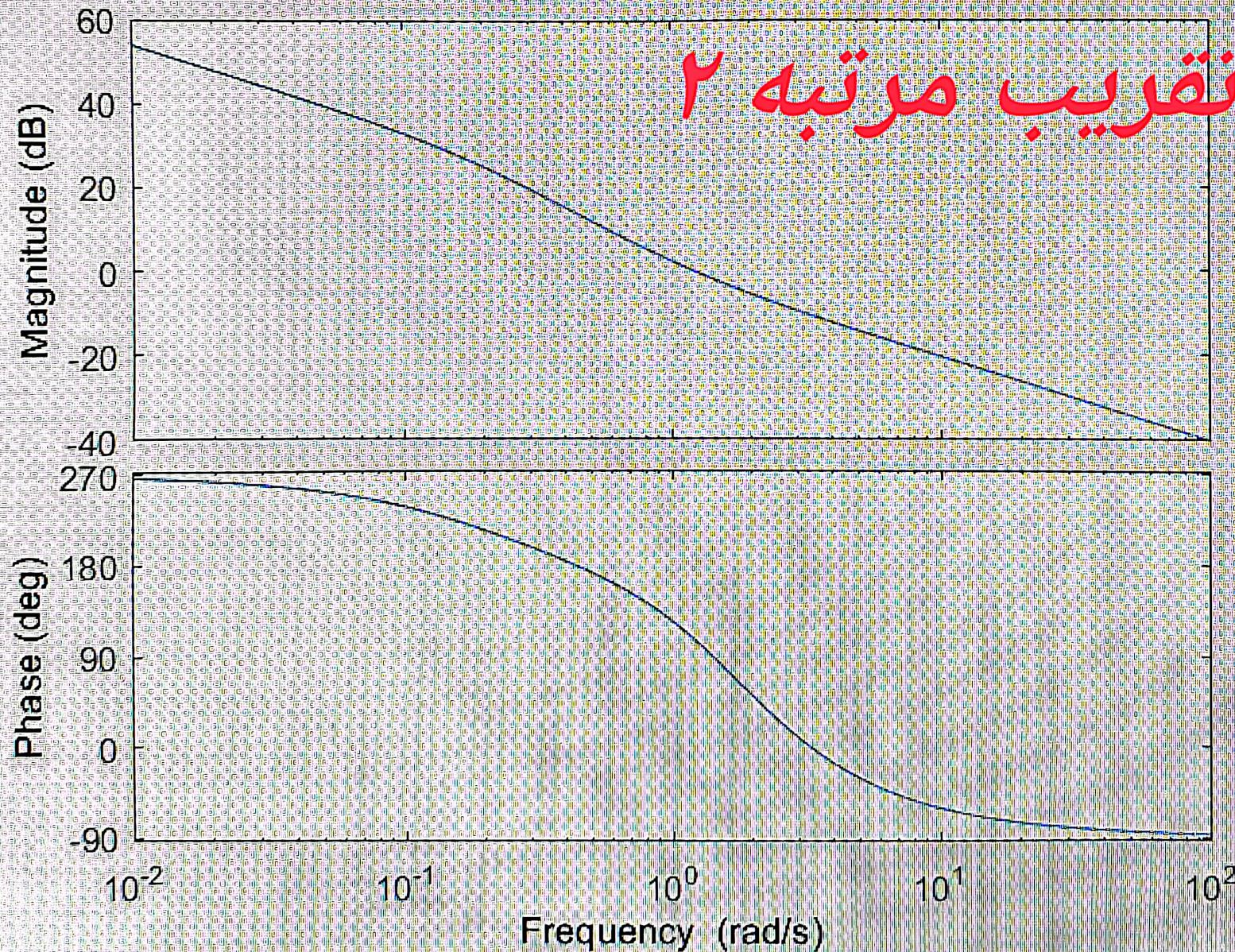
Bode Diagram





Bode Diagram

تقریب مرتبه ۲



VARIABLE

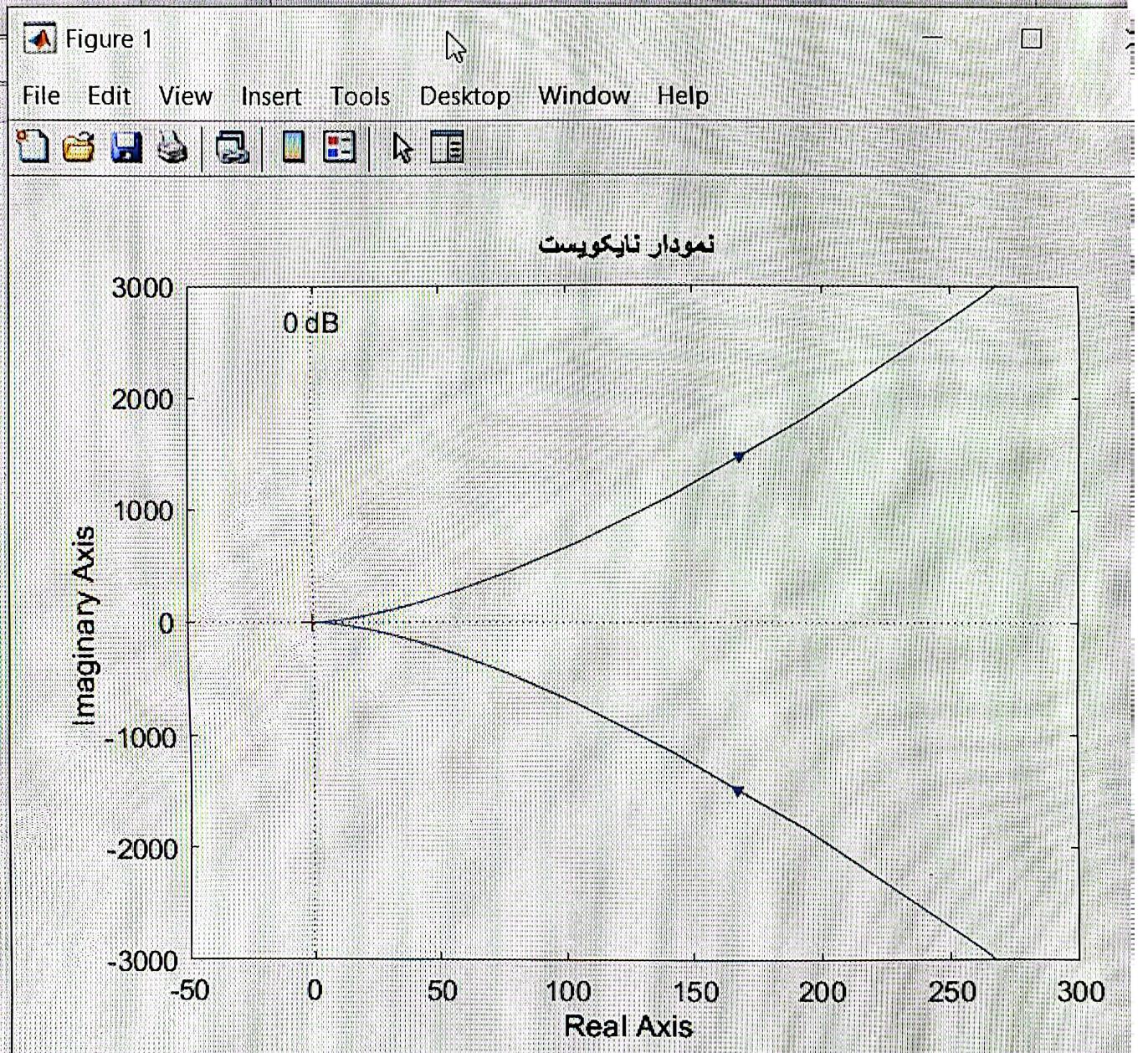
CODE

Command Window

```
>>  
>>  
>>  
>>  
% تابع تبدیل داده شده  
numerator = [-1 10 35 50 24];  
denominator = [1 100 0 0 0];  
  
% ایجاد تابع تبدیل  
sys = tf(numerator, denominator);
```

```
% رسم نمودار نایکویست  
nyquist(sys)  
title('نمودار نایکویست')  
grid on  
>>  
>>  
>>  
>>
```

سوال ۲



$$\frac{k(T_{s+1})}{T_{s+1}} \quad T_R \ll T_s \quad (1)$$

- با توجه به محدوده فازی، سیم lead میگذرد

با توجه به محدوده محدوده فازی، سیم lead میگذرد

$P_s = 10^9$, $Z = 10$ و ω میتوان نمود که $\textcircled{1}$ میتوان نمود

$$\rightarrow \frac{1}{10} \times \frac{\frac{1}{10} - 1}{0,015 - 1} \quad \omega \rightarrow 0 \rightarrow \frac{1}{10} \quad \omega \rightarrow \infty \rightarrow 1$$

