Name:

Answer the two problems.

1. Consider the following transfer function for a system:

$$G(s) = \frac{100}{2s^4 + 2s^3 + s^2 + 2s + 1}.$$

   (a) Determine the number of poles in the RHP via the Routh array criteria.

   (b) Determine the stability of the system.

2. For a unity-feedback system (shown in Figure 1) with **unit-step input** and

$$G(s) = \frac{5}{s^3 + s^2 + 2s - 4},$$

find the steady-state error (**SSE**) given that the CLTF is *stable*.