

1. (100 points) An open-loop transfer function is given as,

$$G(s) = \frac{1}{s^3 + 2.0s^2 + 3.05049s + 7.05049}$$

which of the following PI-controllers stabilizes the system in a closed-loop unit feedback structure?

- A.  $F(s) = 0.80302 + \frac{1.101}{s}$
- B.  $F(s) = -9.79799 + \frac{1.101}{s}$
- C.  $F(s) = -9.69698 + \frac{2.601}{s}$
- D.  $F(s) = 0.70201 + \frac{2.601}{s}$
- E.  $F(s) = -2.601 + \frac{0.55049}{s}$