

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

$$G(s) = \frac{1}{s^3 + 2.0s^2 + 3.05554s + 7.05554}$$

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

- A.  $F(s) = -9.77779 + \frac{1.1111}{s}$
- B.  $F(s) = -2.6111 + \frac{0.55554}{s}$
- C.  $F(s) = 0.83333 + \frac{1.1111}{s}$
- D.  $F(s) = 0.72221 + \frac{2.6111}{s}$
- E.  $F(s) = -9.66667 + \frac{2.6111}{s}$