

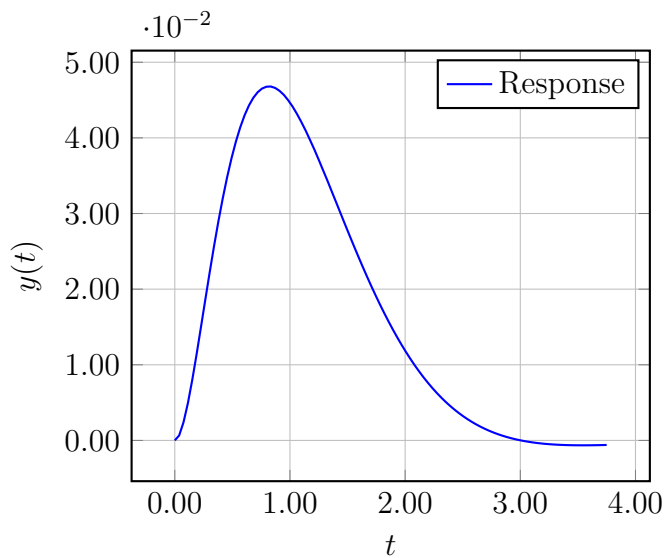
1. (50 points) An open-loop transfer function is given as,

$$G(s) = \frac{1}{s^3 + 2.0s^2 + 3.5s + 7.5}$$

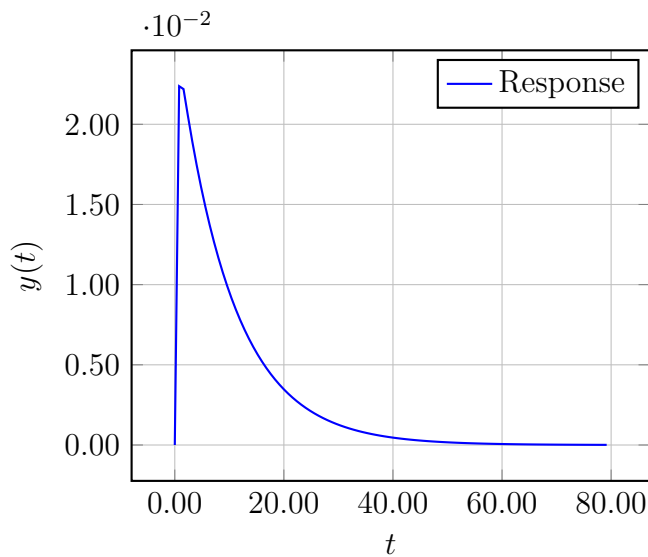
which of the following PI-controllers stabilizes the system in a closed-loop unit feedback structure?

- A.  $F(s) = -3.5 + \frac{1.0}{s}$
- B.  $F(s) = 2.5 + \frac{3.5}{s}$
- C.  $F(s) = 3.5 + \frac{2.0}{s}$
- D.  $F(s) = -8.0 + \frac{2.0}{s}$
- E.  $F(s) = -7.0 + \frac{3.5}{s}$

2. (50 points) Which of the following does not overshoot?



A.



B.