

**Name:**

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Given a first order system,  $H(s) = \frac{1}{Ts + 1}$ , with time-constant  $T$ .

1. What is the ramp response, i.e., what is  $y_{ramp}(t)$  if the input to the system is a unit ramp function, i.e.,  $u(t) = t$ ? Your response should be in terms of  $T$ .
2. Obtain the tracking error  $e(t) = y_{ramp}(t) - u(t)$ ? What's  $e(\infty)$ ?