1. Sketch the response of each of the systems below to a step input.

   a) \( H(s) = \frac{10}{s+2} \)
   
   b) \( H(s) = \frac{0.2}{s+0.2} \)

2. Given, the two step responses shown below, the first one is a first order system and the second one is a second order system. Determine the transfer functions for both systems.

3. Plot the pole positions for each of the following systems, determine the values for \( \zeta \) and \( \omega_n \) for the stable second order systems with complex poles.

   a) \( H(s) = \frac{1}{s+4} \)
   
   b) \( H(s) = \frac{1}{s+10} \)
   
   c) \( H(s) = \frac{1}{s^2 + 4s + 3} \)
   
   d) \( H(s) = \frac{1}{s^2 + 4s + 16} \)
   
   e) \( H(s) = \frac{1}{s^2 + 4s + 2} \)
   
   f) \( H(s) = \frac{1}{s^2 - 4s + 16} \)

4. Give the general form of the response of the systems in Problem 3 to a step input.

5. Determine the steady-state response of the systems in Problem 3 a), d), and f) to an input of \( x(t) = 2 \cos(4t-20^\circ)u(t) \).