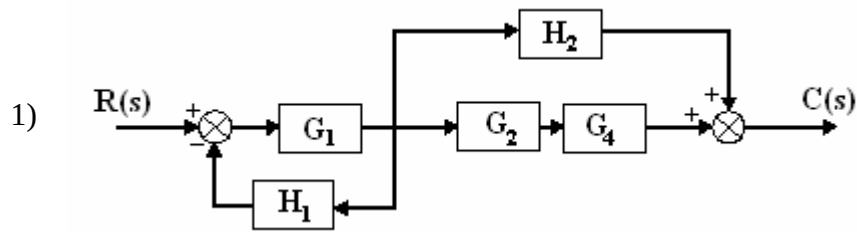


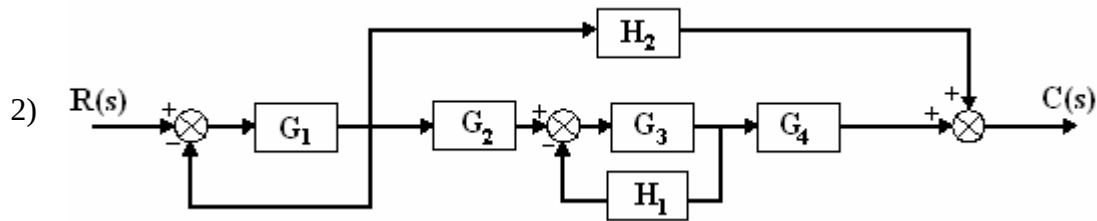
LISTA DE EXERCÍCIOS 5

Utilizando os métodos conhecidos para redução de diagrama de blocos, encontre

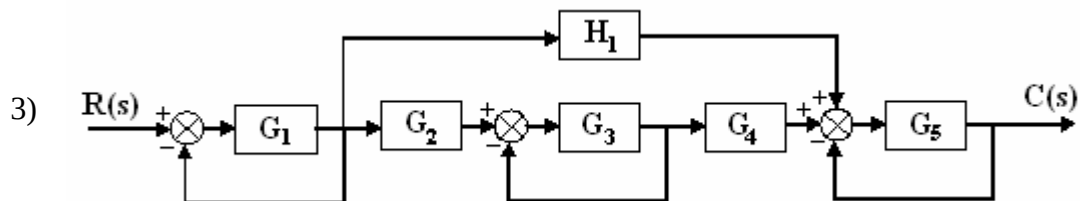
$$F(s) = \frac{C(s)}{R(s)}.$$



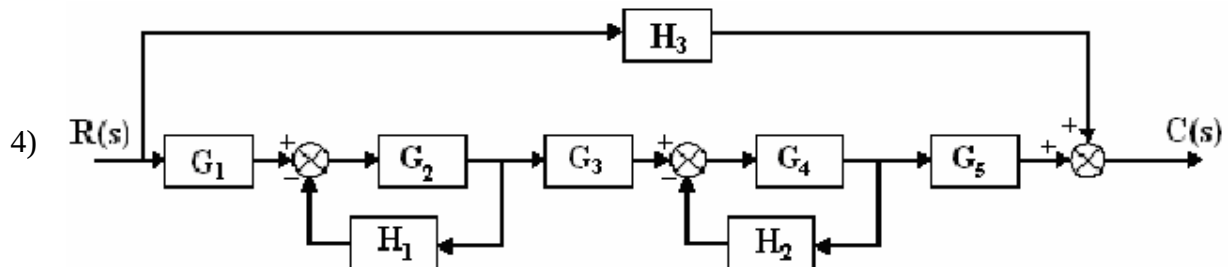
$$F(s) = \frac{G_1 G_2 G_4 + G_1 H_2}{1 + G_1 H_1}$$



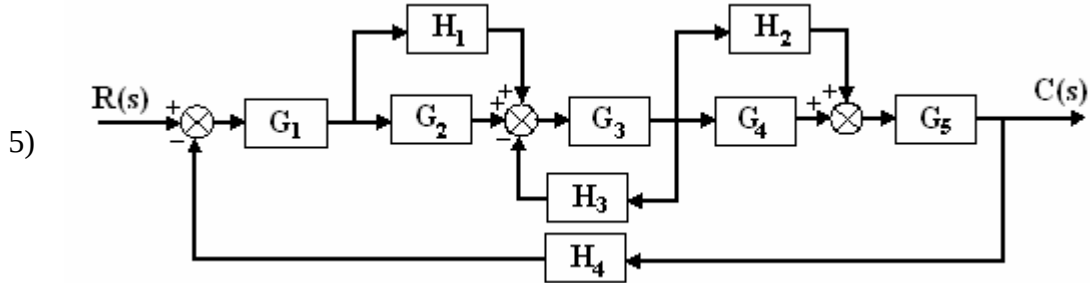
$$F(s) = \frac{G_1 G_2 G_3 G_4 + G_1 H_2 + G_1 G_3 H_1 H_2}{1 + G_1 + G_3 H_1 + G_1 G_3 H_1}$$



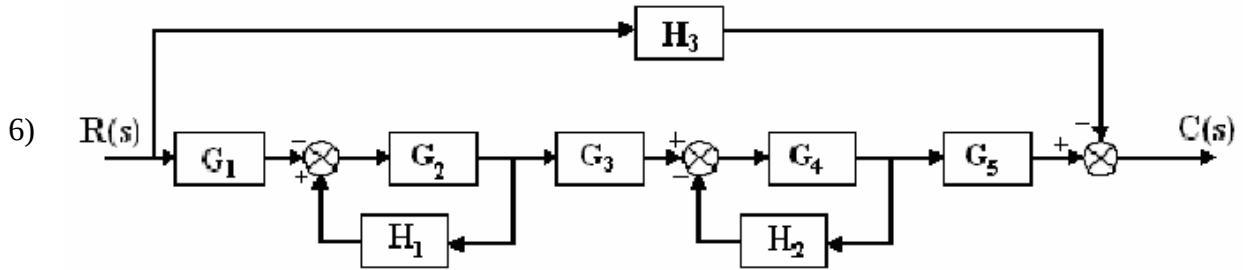
$$F(s) = \frac{G_1 G_2 G_3 G_4 G_5 + G_1 G_5 H_1 + G_1 G_3 G_5 H_1}{1 + G_1 + G_3 + G_5 + G_1 G_3 + G_1 G_5 + G_3 G_5 + G_1 G_3 G_5}$$



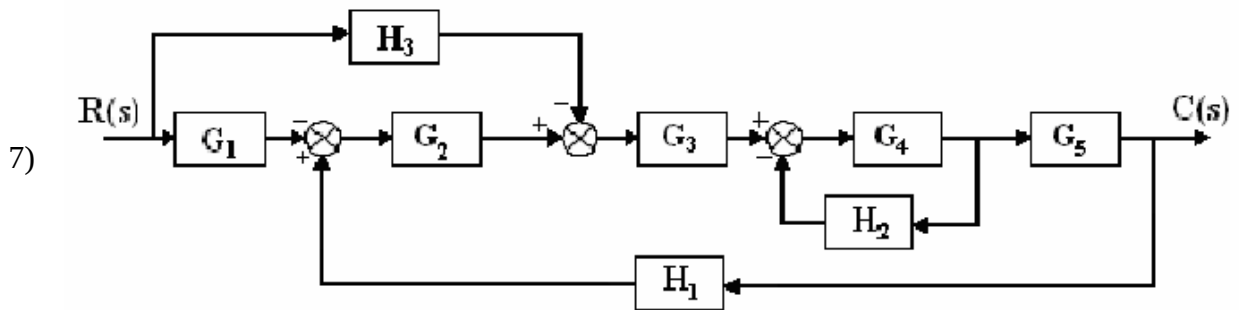
$$F(s) = \frac{G_1 G_2 G_3 G_4 G_5 + H_3 + G_2 H_1 H_3 + G_4 H_2 H_3 + G_2 G_4 H_1 H_2 H_3}{1 + G_2 H_1 + G_4 H_2 + G_2 G_4 H_1 H_2}$$



$$F(s) = \frac{G_1 G_2 G_3 G_4 G_5 + G_1 G_3 G_5 H_1 H_2 + G_1 G_3 G_4 G_5 H_1 + G_1 G_2 G_3 G_5 H_2}{1 + G_1 G_2 G_3 G_4 G_5 H_4 + G_3 H_3 + G_1 G_3 G_5 H_1 H_2 H_4 + G_1 G_3 G_4 G_5 H_1 H_4 + G_1 G_2 G_3 G_5 H_2 H_4}$$



$$F(s) = \frac{-G_1 G_2 G_3 G_4 G_5 - H_3 + G_2 H_1 H_3 - G_4 H_2 H_3 + G_2 G_4 H_1 H_2 H_3}{1 - G_2 H_1 + G_4 H_2 - G_2 G_4 H_1 H_2}$$



$$F(s) = \frac{-G_1 G_2 G_3 G_4 G_5 - G_3 G_4 G_5 H_3}{1 + G_4 H_2 - G_2 G_3 G_4 G_5 H_1}$$