

Thus

$$z - 243 = 30(x - 9) + 72(y - 3)$$

Hence a linear approximation of the given nonlinear equation near the operating point is

$$z - 30x - 72y + 243 = 0$$

PROBLEMS

B-2-1. Simplify the block diagram shown in Figure 2-29 and obtain the closed-loop transfer function $C(s)/R(s)$.

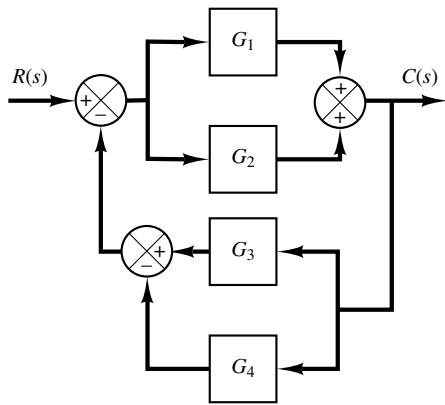


Figure 2-29
Block diagram of a system.

B-2-2. Simplify the block diagram shown in Figure 2-30 and obtain the closed-loop transfer function $C(s)/R(s)$.

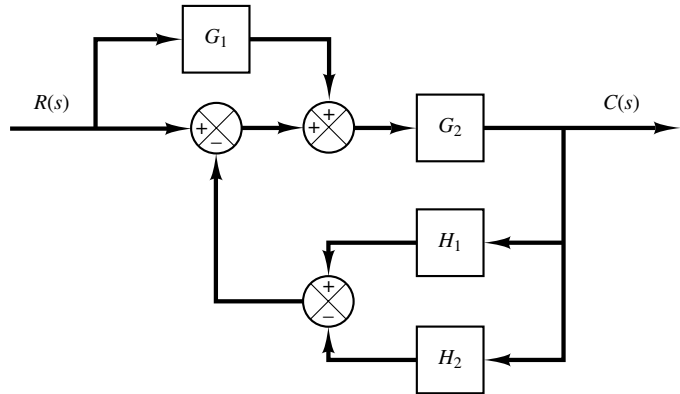


Figure 2-30
Block diagram of a system.

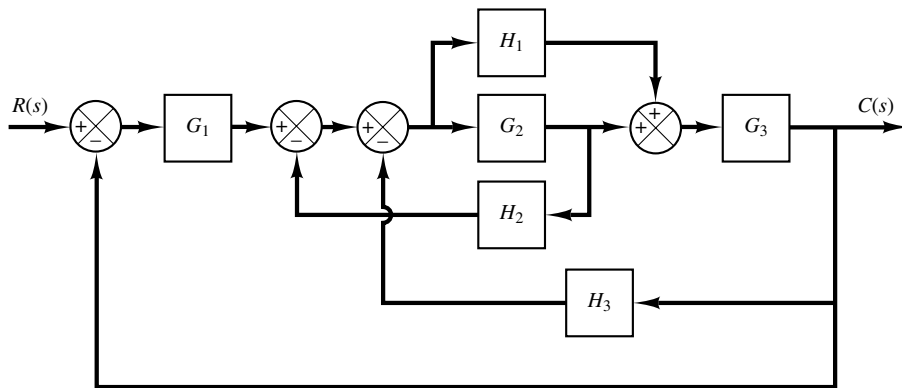


Figure 2-31
Block diagram of a system.