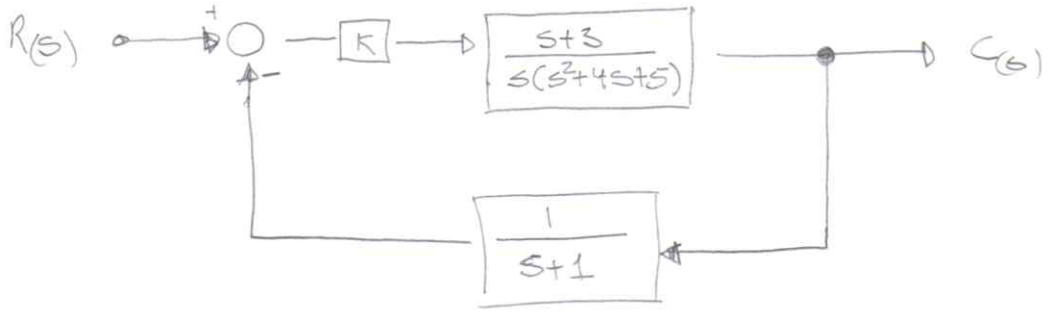
8.



$$\frac{K\ \frac{s+3}{s(s^2+4s+5)}}{1+\frac{K(s+3)}{s(s^2+4s+5)(s+1)}} = \frac{\frac{K(s+3)}{s(s^2+4s+5)}}{\frac{s(s^2+4s+5)(s+1)+K(s+3)}{s(s^2+4s+5)(s+1)}}$$

$$G(s) = \frac{K(s+3)(s+1)}{s(s^2+4s+5)(s+1)+K(s+3)}$$

$$(s^3+4s^2+5s)(s+1)+Ks+3K$$

$$= s^4+s^3+4s^3+4s^2+5s^2+5s+Ks+3K$$

$$= s^4+5s^3+9s^2+(5+K)s+3K$$

4	1	9	3K	∅
3	5	5+K	∅	∅
2	b_{n-1}	b_{n-2} (3K)	∅	
1	c_{n-1}	∅		
0	d_{n-1}			

$$b_{n-1} = \frac{45-(5+K)}{5} = 9-\frac{5+K}{5}$$

$$b_{n-2} = \frac{15K-1.\phi}{5}$$

$$c_{n-1} = \frac{\frac{45-(5+K)}{5}\cdot(5+K)-5.3K}{\frac{45-(5+K)}{5}}$$

$$= (5+K)-\frac{15K\cdot 5}{45-(5+K)}$$

$$= 5+K-\frac{75K}{45-(5+K)}$$

$$= 5+K-\frac{75K}{45-5-K}$$

$$= 5+K-\frac{75K}{40-K}$$

$$d_{n-1} = 3K$$

etc