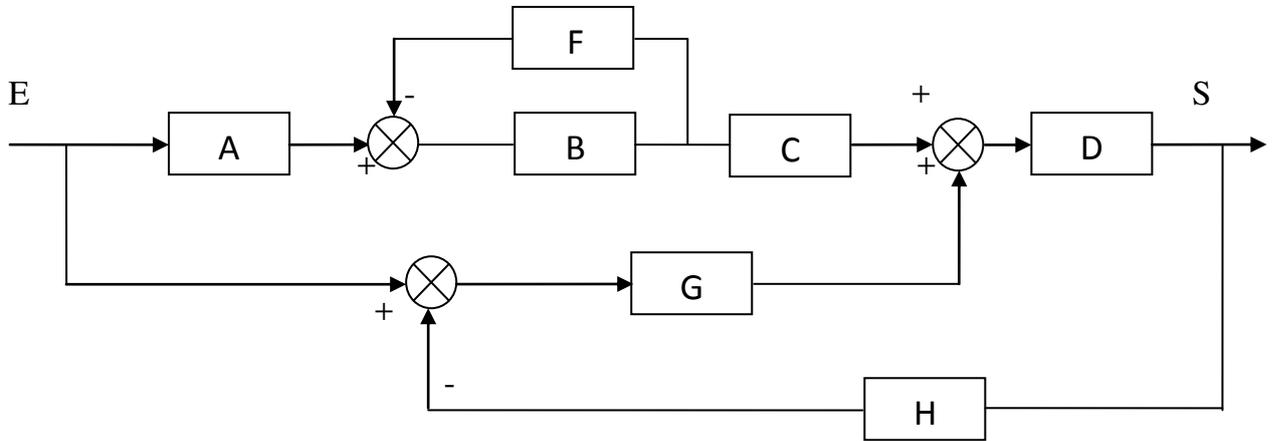


TD N°2

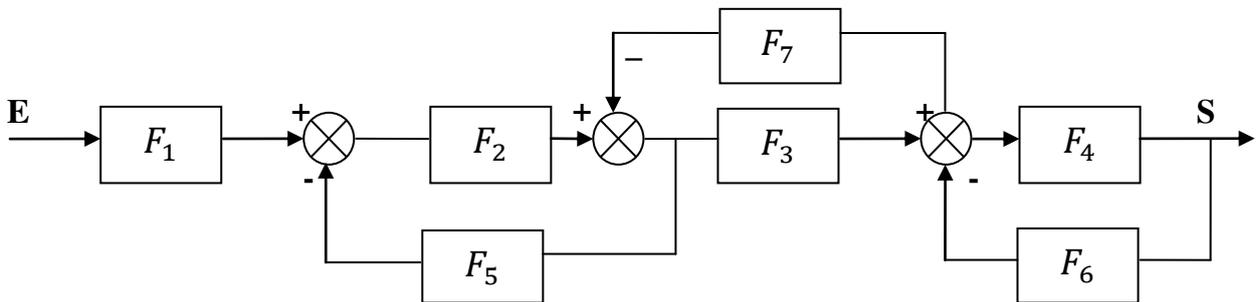
Fonction de transfert

Exercice 1 : Soit le schéma bloc suivant



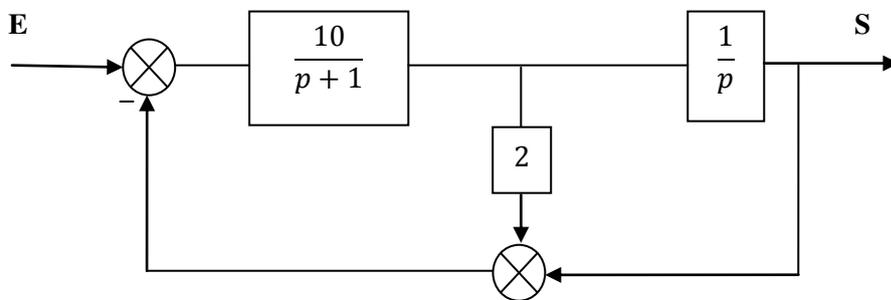
- Calculer la fonction de transfert $\frac{S}{E}$ de ce schéma bloc?

Exercice 2 :



- Calculer la fonction de transfert de ce schéma?

Exercice 3 :

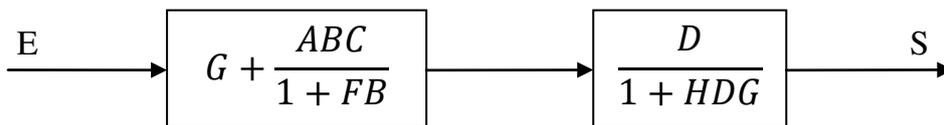
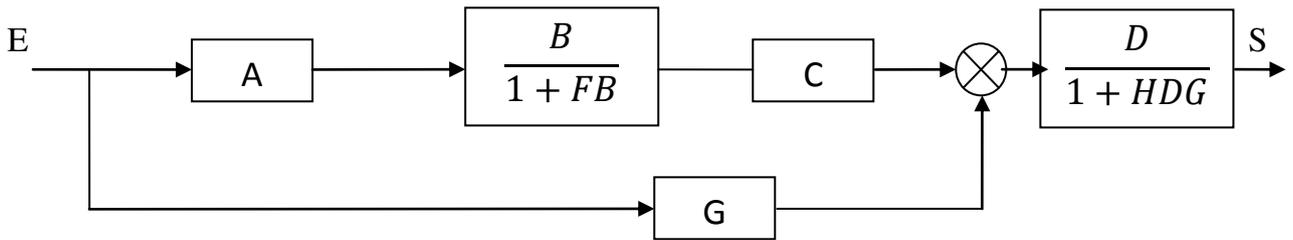
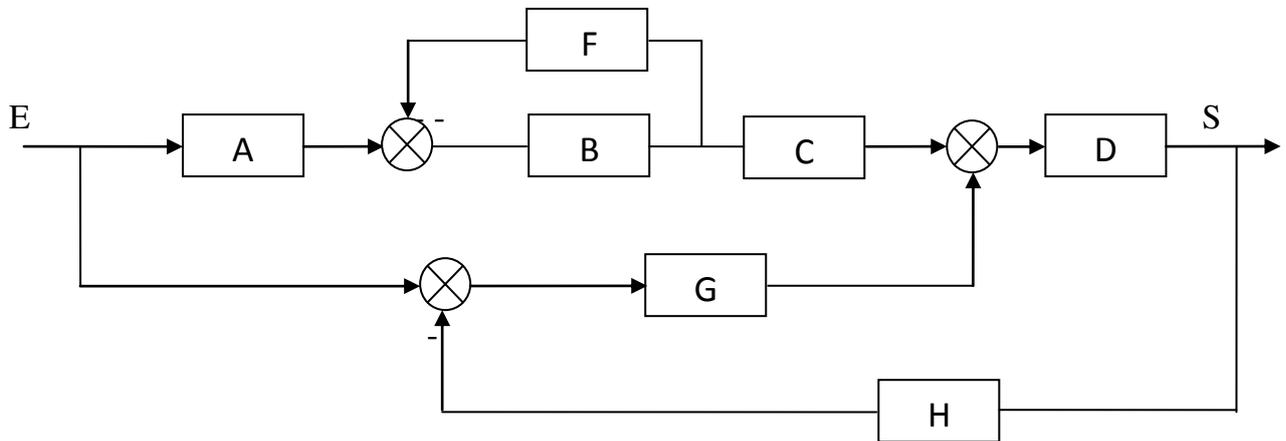


- Calculer la F.T $\frac{S}{E}$?

Solution de TD 2

EX 1 :

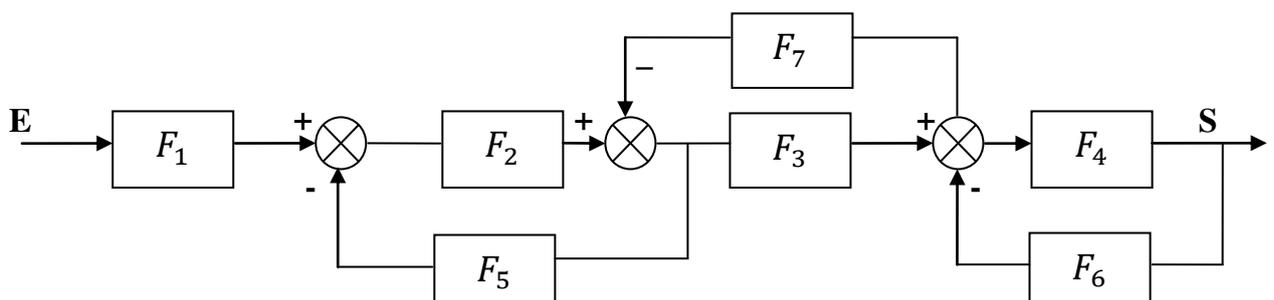
1) Calculer la fonction de transfert $\frac{S}{E}$ par la rédaction du schéma bloc :

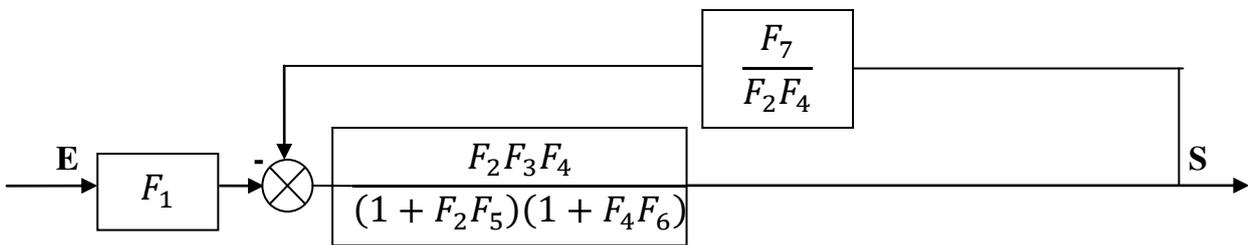
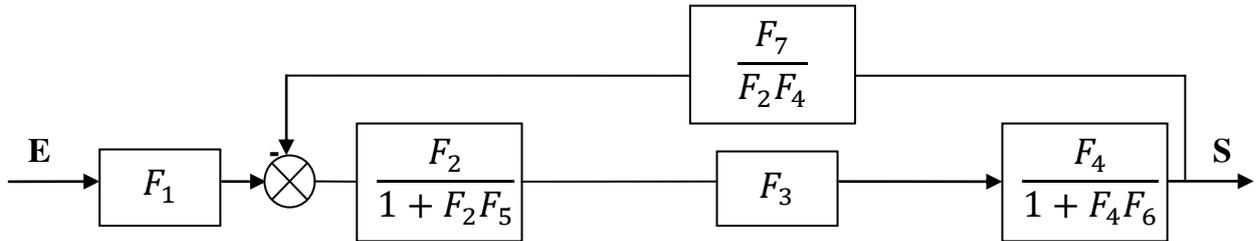


$$\text{Donc } \frac{S}{E} = \frac{DG + FB DG + ABCD}{(1+FB)(1+HDG)}$$

EXO 2 :

1) Calculer la fonction de transfert $\frac{S}{E}$ par la rédaction du schéma bloc :

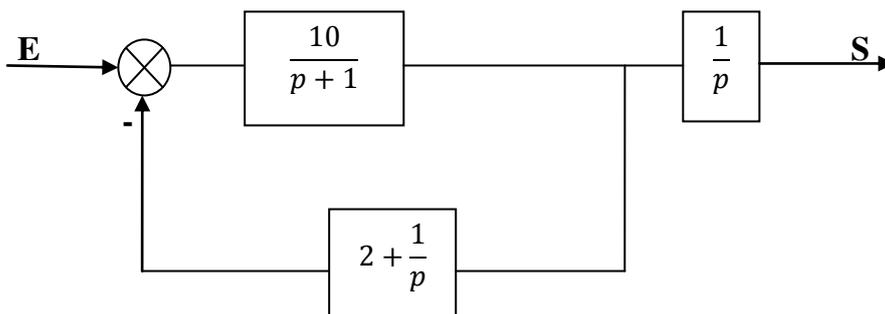
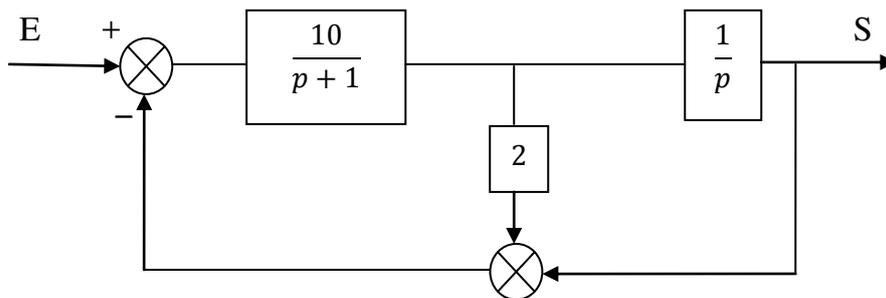


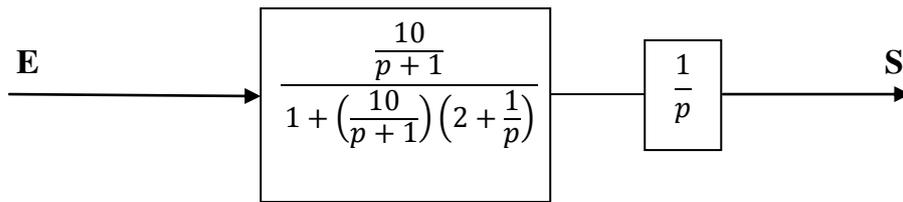


$$\frac{S}{E} = \frac{F_1 F_2 F_3 F_4 / (1 + F_2 F_5)(1 + F_4 F_6)}{1 + F_2 F_3 F_4 F_7 / (1 + F_2 F_5)(1 + F_4 F_6) F_2 F_4}$$

$$\frac{S}{E} = \frac{F_1 F_2 F_3 F_4}{(1 + F_2 F_5)(1 + F_4 F_6) + F_3 F_7}$$

EXO3 :





$$\frac{S}{E} = \frac{1}{p} \cdot \left(\frac{\frac{10}{p+1}}{1 + \left(\frac{10}{p+1}\right)\left(2 + \frac{1}{p}\right)} \right) = \frac{10}{p^2 + 21p + 10}$$