

**CODE CNIM :**

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CONCOURS 2018

**ÉPREUVE DE SCIENCE DE L'INGENIEUR**

**Partie 1 : Vérification des performances cinématiques du concasseur à mâchoire**

**Phase de concassage :**

**Question 1 :**

**Question 2 :**

**Question 3 :**


**Question 4 :**

**Question 5 :**

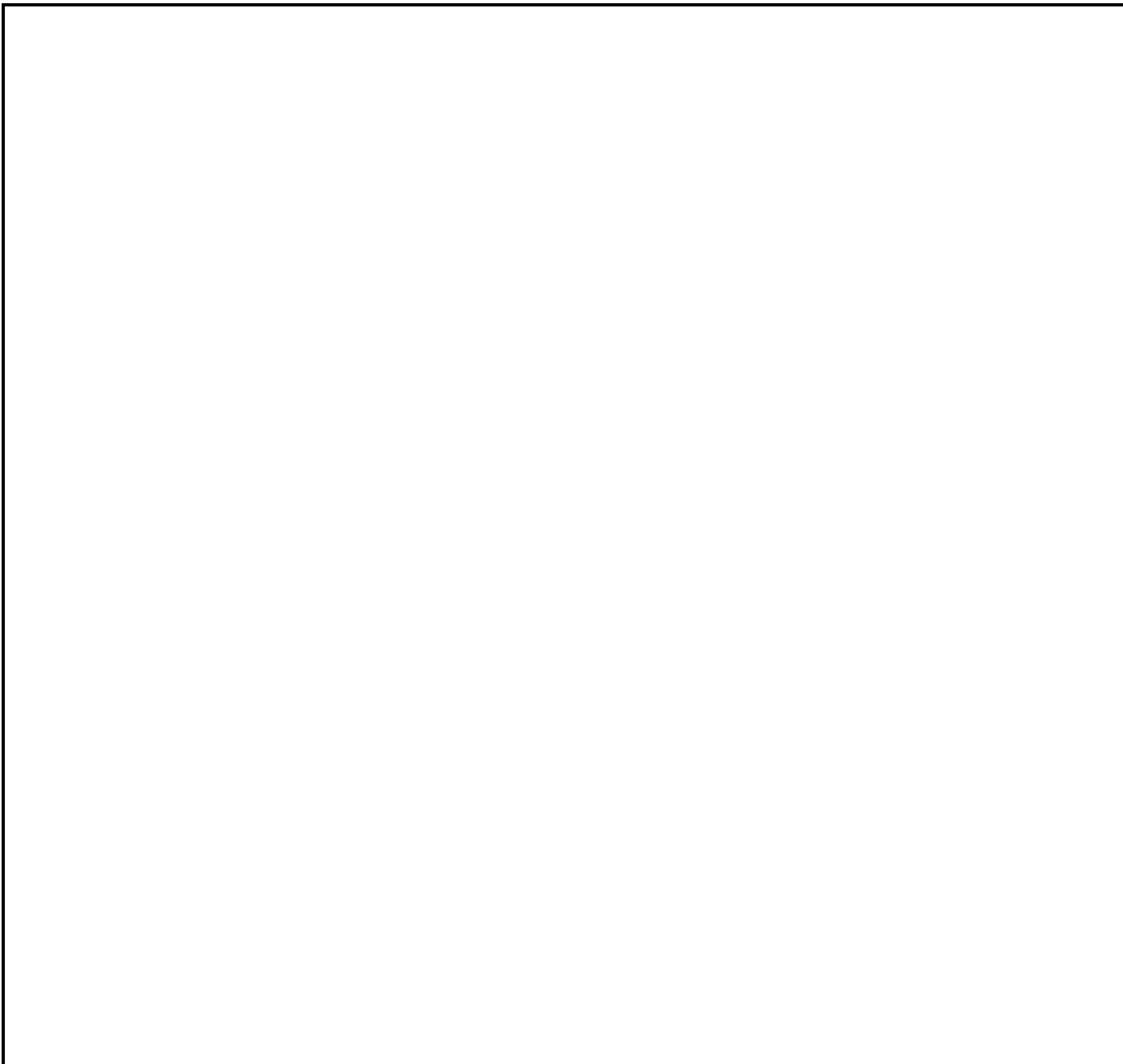
**Question 6 :**

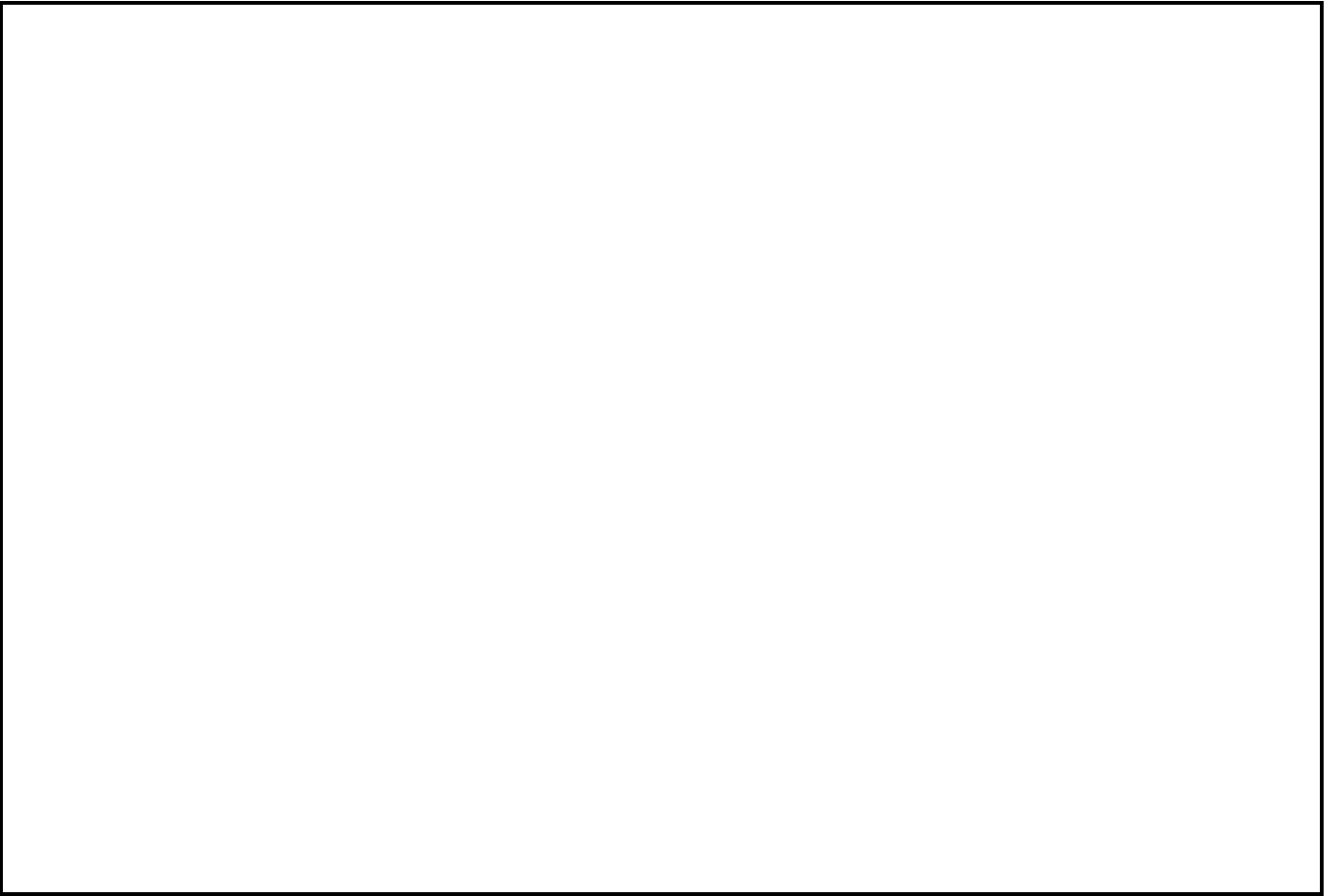
## **Phase de réglage de l'écartement : Closed Side Set (CSS)**

Question 7 :

A large, empty rectangular box with a black border, intended for the answer to Question 7.

Question 8 :

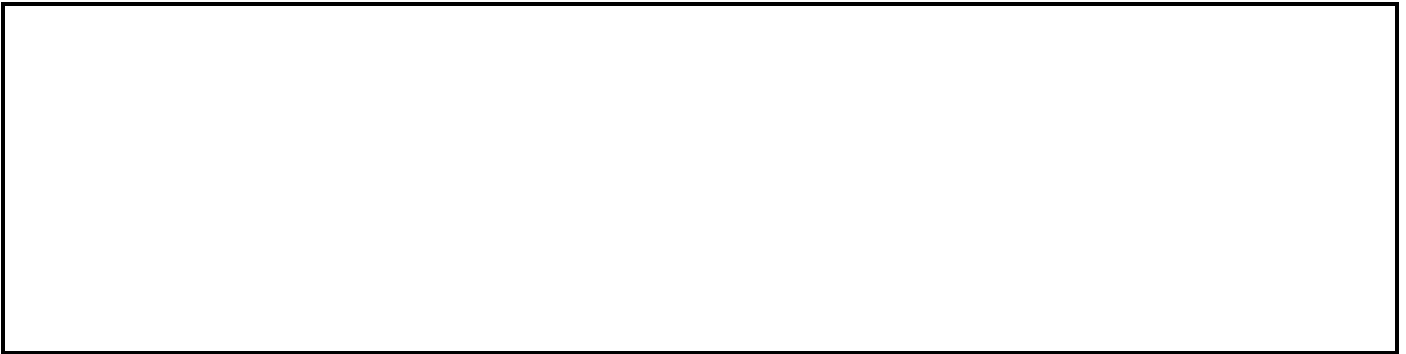
A large, empty rectangular box with a black border, intended for the answer to Question 8.



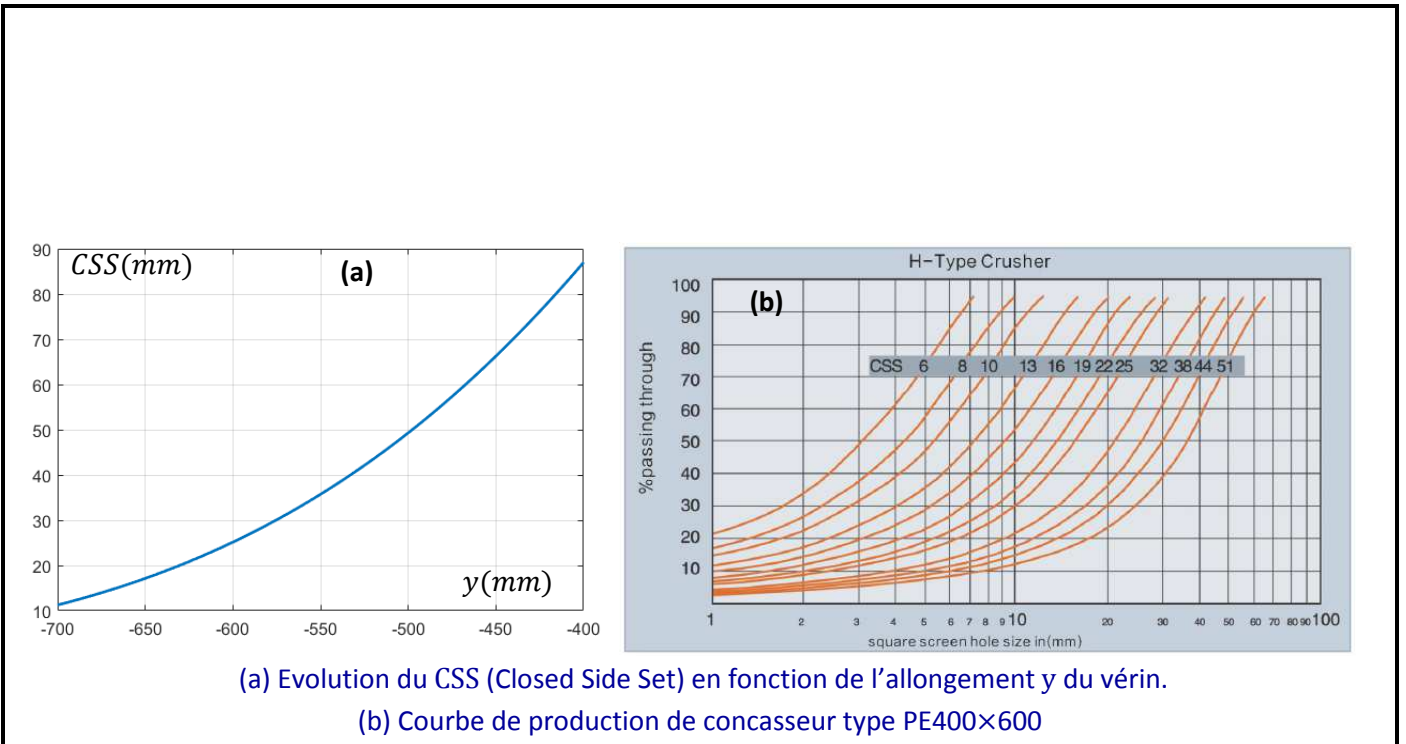
**Question 9 :**



Question 10 :



Question 11 :



**Partie 2 : Vérification des performances du système de réglage de CSS**

**Masse équivalente ramenée sur l'axe du vérin :**

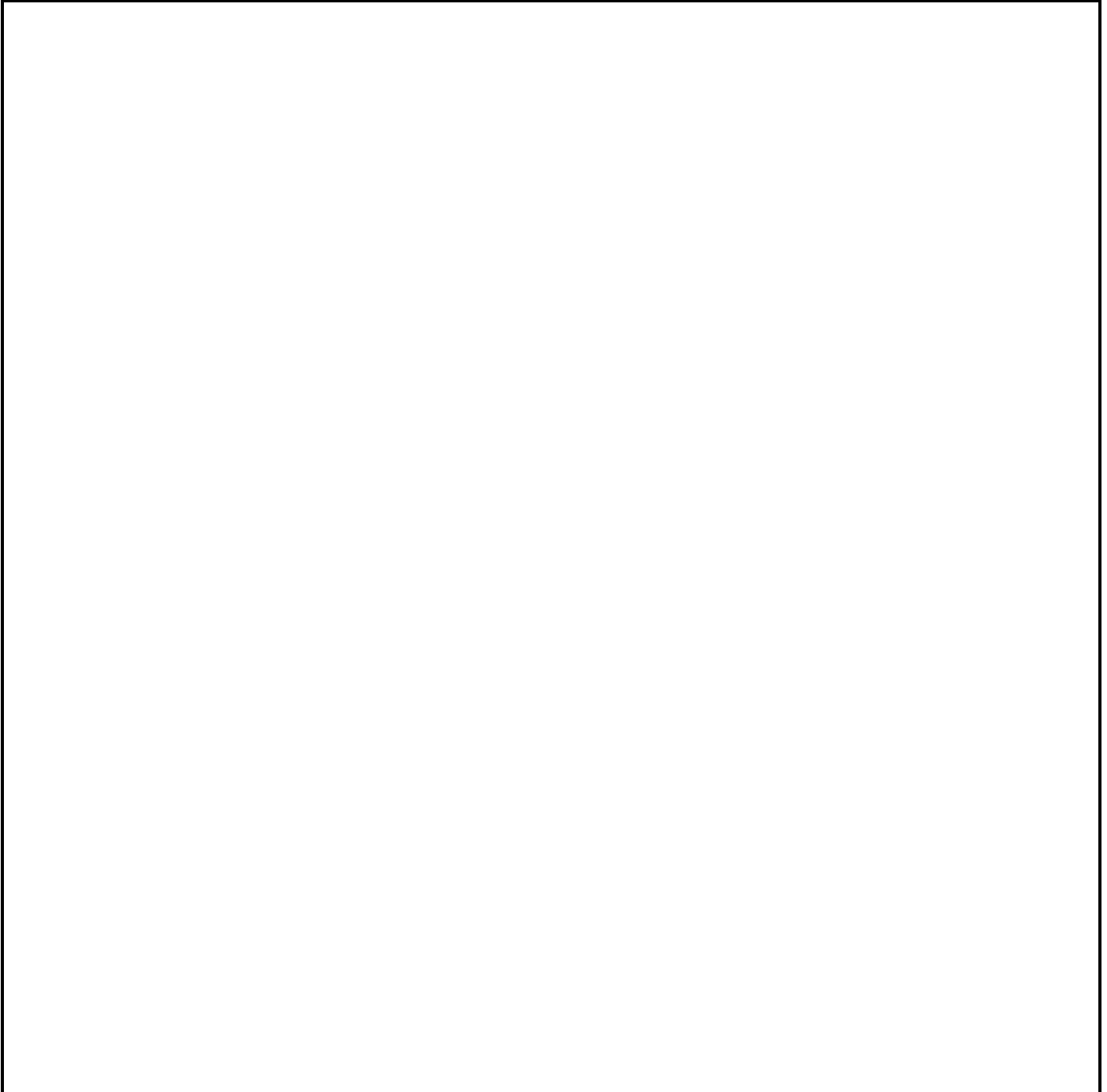
Question 12 :



**Question 13 :**

A large, empty rectangular box with a black border, intended for the student's answer to Question 13.

**Question 14 :**

A very large, empty rectangular box with a black border, intended for the student's answer to Question 14.

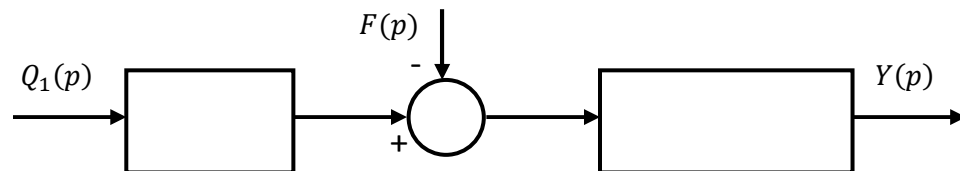
Question 15 :

**Asservissement de position du système de réglage de l'écartement  
CSS :**

**Modélisation du comportement du (Vérin + Masse équivalente)**

Question 16 :

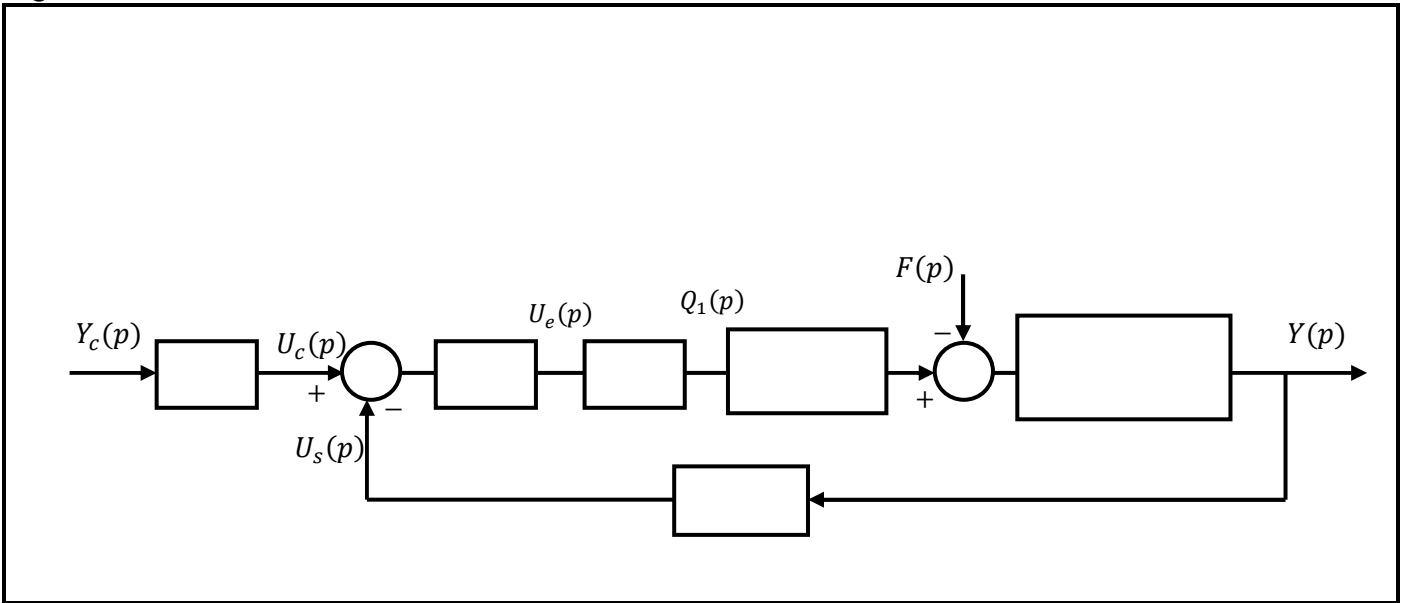
Question 17 :



Question 18 :

## Modélisation du système bouclé avec perturbation

Question 19 :

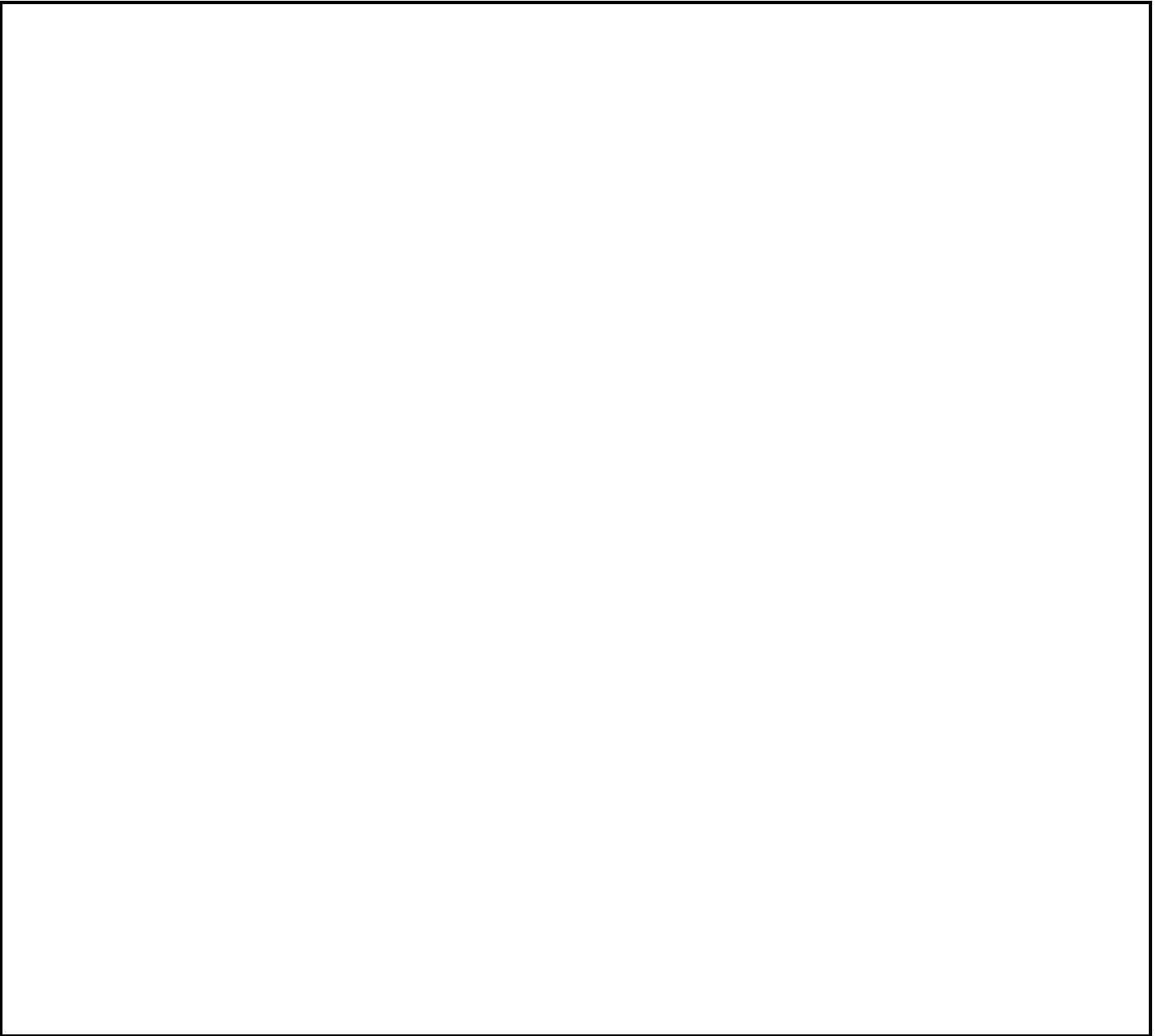


Question 20 :



Question 21 :



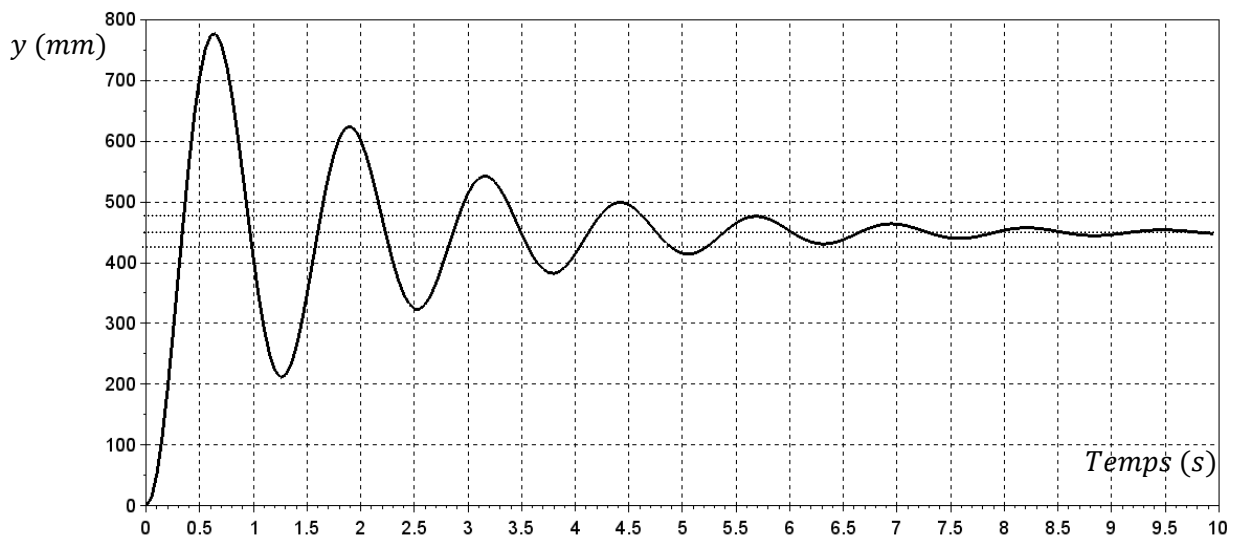


**Modélisation du système bouclé sans perturbation**

**Question 22 :**



**Question 23 :**



Réponse indicielle pour un échelon de position  $y_c = 450\text{mm}$ ,  $C(p)=1$

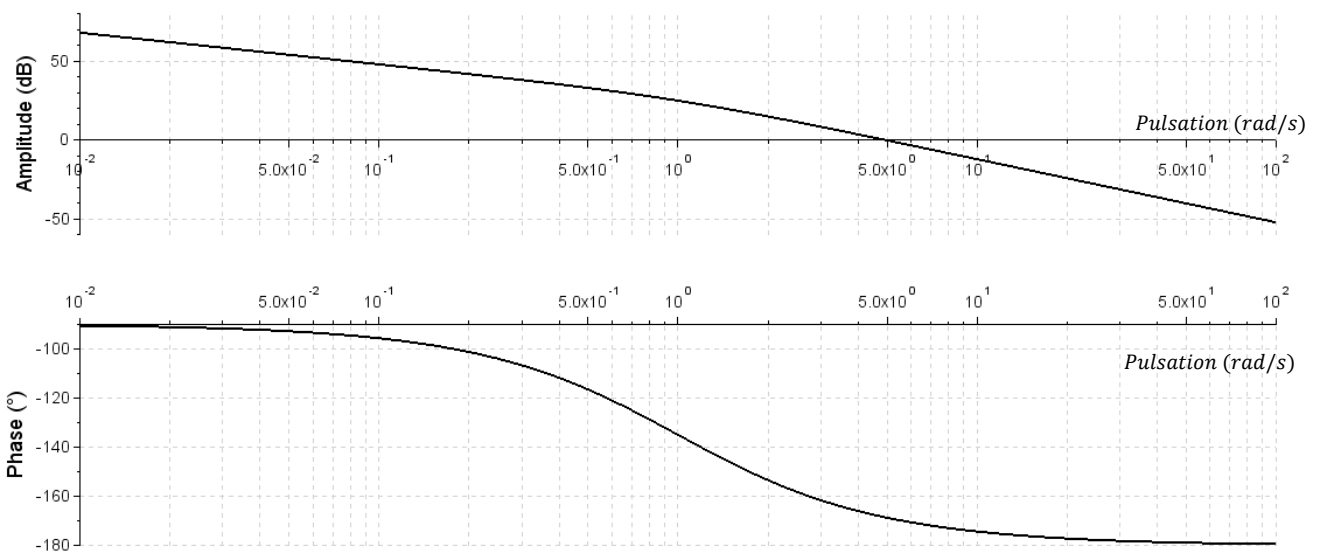
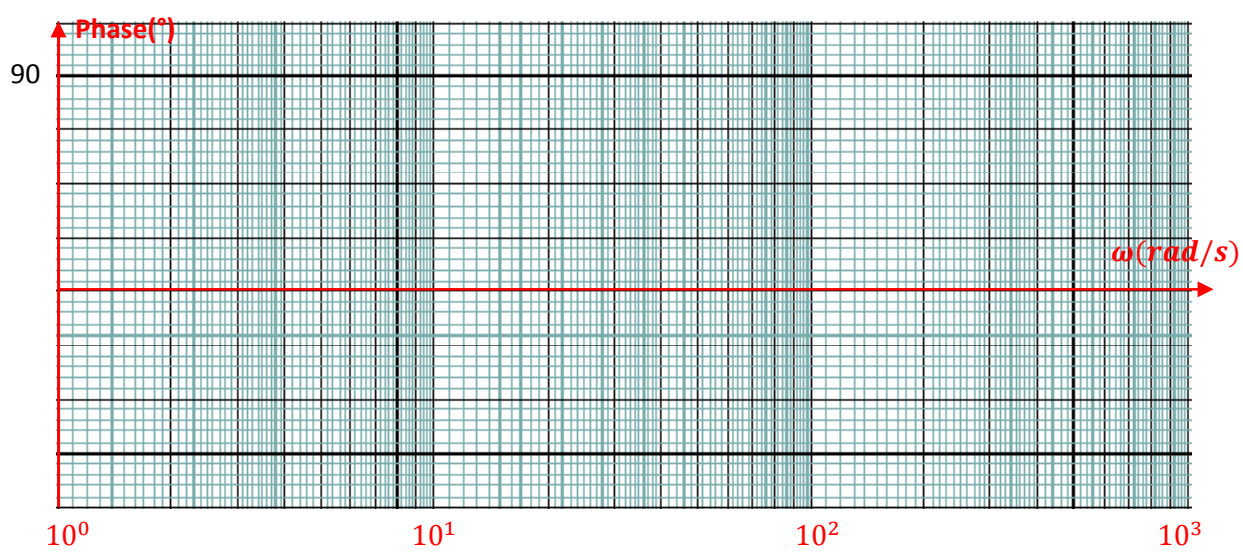
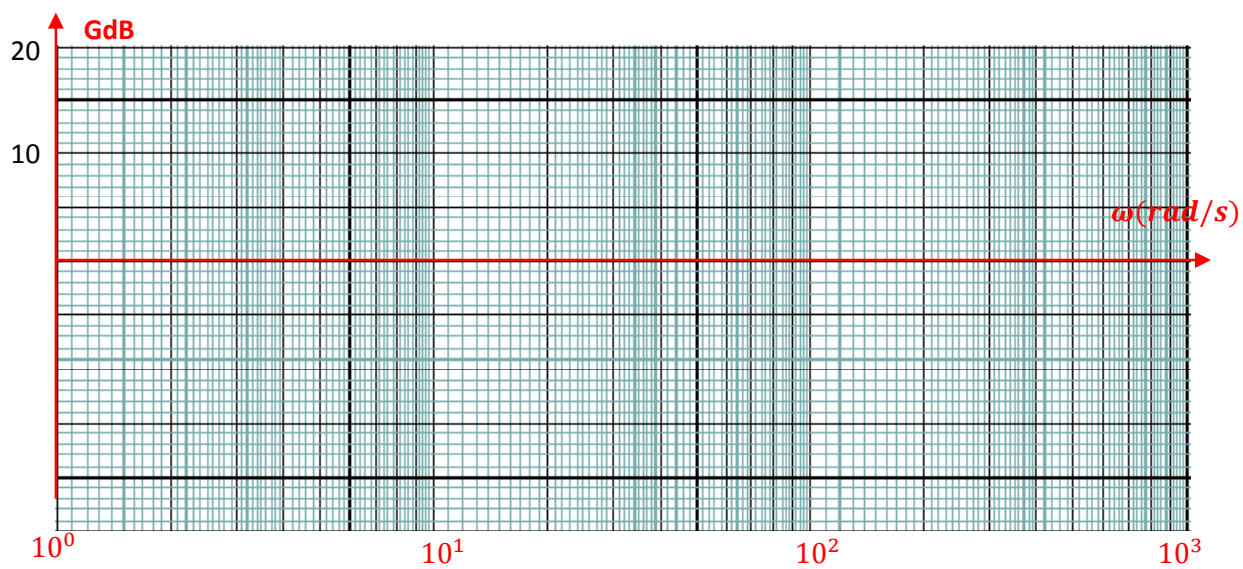
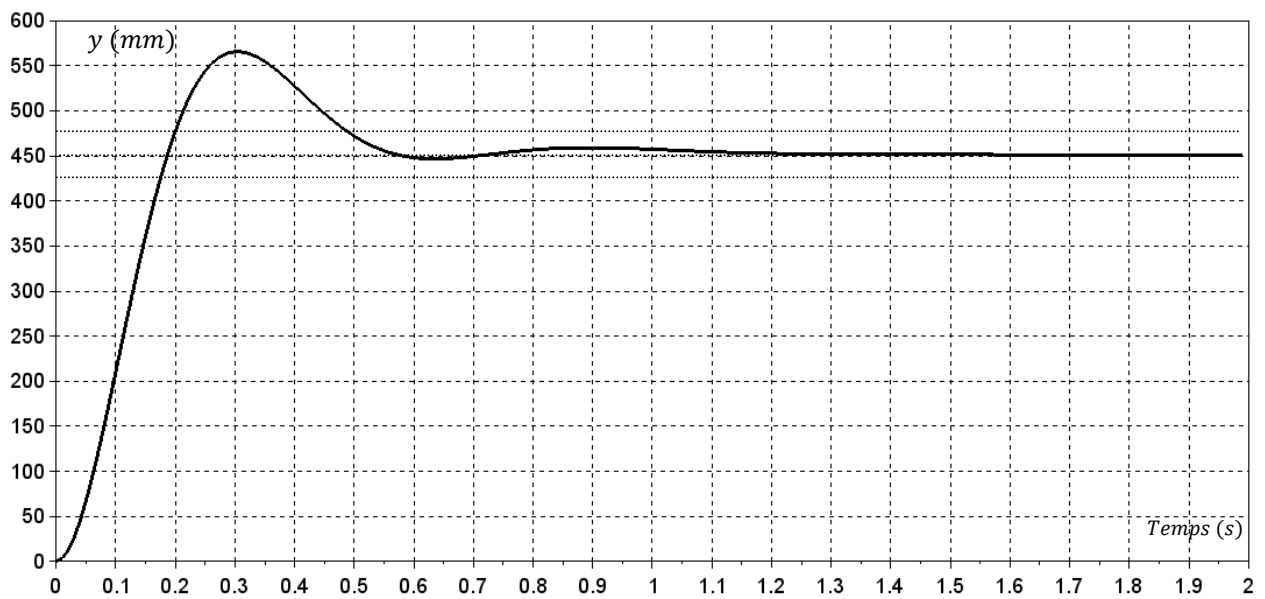


Diagramme de Bode de la FTBO,  $C(p)=1$

Question 24 :



Question 25 :



Réponse indicielle pour un échelon de position  $y_c = 450\text{mm}$ ,  $C(p) = \frac{1+0,47p}{1+0,08p}$

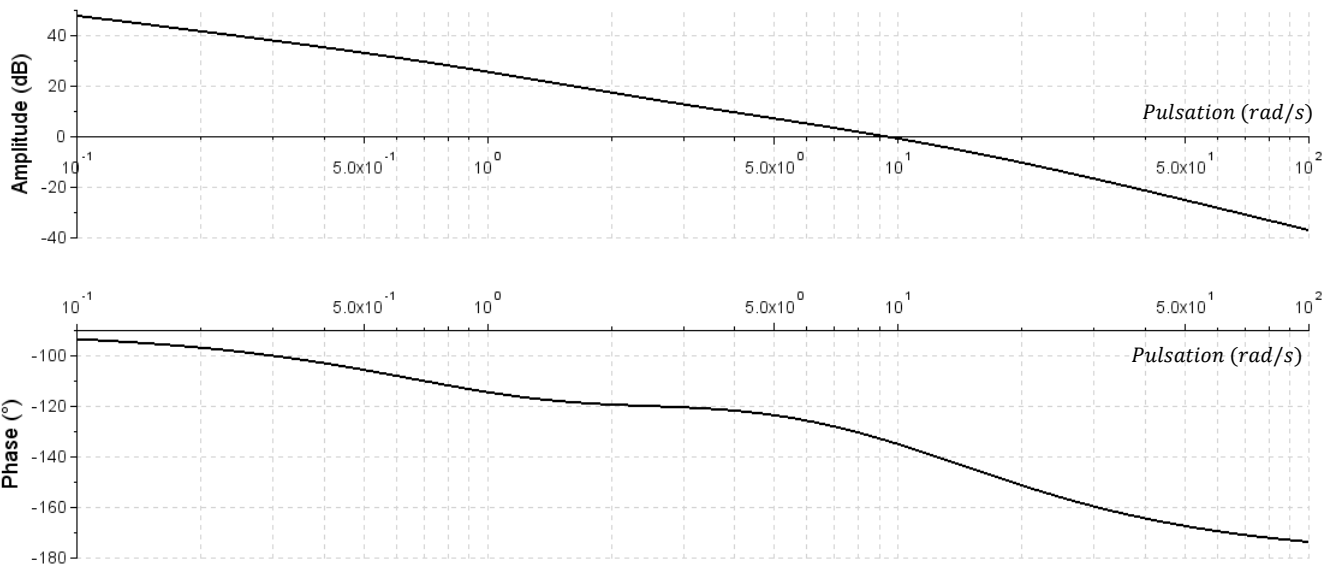


Diagramme de Bode de la FTBO,  $C(p) = \frac{1+0,47p}{1+0,08p}$