1. METHODE STATIQUE
2. UN SEUL RESSORT

Description de la manipulation :

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| --- | --- | --- | --- | --- | --- | --- |
| **m ( )** | **x ( )** | **K ( )** | **F( )** | **Δx ( )** | **ΔK ( )** | **ΔK/K (%)** |
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**x = ; Δx = ; g=**

**ΔK = ; K = ; F=**

1. Tracer de la courbe F= f(x)

Prendre l’échelle : axe des ordonnées : **1cm 0.1m** ; axe des abscisses : **1cm 0.005m**

Commentaires sur la courbe:

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1. Déduction graphique de l’accélération de la pesanteur **Kgr**

Prendre pour le calcul de la pente les deux points sue la courbe tel que : x1=2cm et h2=7 cm. Indiquer ces points sur la courbe par des **croix**.

Pente : **a=**……………………………………………………………………………………………………………..

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**Kgr=**……………………………………………………………………………………………………………………………………………………………………………………………………………………………………………….

1. Apres avoir rappelé l’unité de cette constante de raideur dans le système SI, vérifier l’homogénéité de l’expression par une analyse dimensionnelle.

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1. **DEUX RESSORTS EN SERIE**

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| --- | --- | --- | --- | --- | --- | --- |
| **m ( )** | **x ( )** | **KS ( )** | **KSt( )** | **Δx ( )** | **ΔKS ( )** | **ΔKS/KS  (%)** |
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**x = ; Δx = ; g=**

**ΔKS = ; KS = ; KSt=……Kgr**

Comparaison entre KS et KSt

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1. **DEUX RESSORTS EN PARALLELE**

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| --- | --- | --- | --- | --- | --- | --- |
| **m ( )** | **x ( )** | **Kp ( )** | **Kpt  ( )** | **Δx ( )** | **ΔKp ( )** | **ΔKp/Kp (%)** |
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**x = ; Δx = ; g=**

**ΔKp = ; Kp = ; Kpt=……Kgr**

Comparaison entre Kp et Kpt

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1. METHODE DYNAMIQUE:
2. UN SEUL RESSORT:

Description de la manipulation:

…………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………

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| **m ( )** | **tm ( )** | **T ( )** | **T2 ( )** | **K ( )** | **ΔT ( )** | **ΔK ( )** | **ΔK/K (%)** |
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**tm = ; T = ; Δtm =**

**ΔT = ; K = ; ΔK =**

1. Tracer de la courbe **T2= f(m)**

Prendre l’échelle : axe des ordonnées : **1cm 0.020 s2** ; axe des abscisses : **1cm 0.01 kg**

Commentaires sur la courbe:

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1. Déduction graphique de l’accélération de la pesanteur **Kgr**

Prendre pour le calcul de la pente les deux points sue la courbe tel que : m1=40g et m2=150 g. Indiquer ces points sur la courbe par des **croix**.

Pente : **a=**……………………………………………………………………………………………………………..

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**Kgr=**……………………………………………………………………………………………………………………

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1. **DEUX RESSORTS EN SERIE**

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| --- | --- | --- | --- | --- | --- | --- | --- |
| **m ( )** | **tm ( )** | **T ( )** | **T2 ( )** | **KS ( )** | **ΔT ( )** | **ΔKS ( )** | **ΔKS/KS (%)** |
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**tm = ; T = ; Δtm =**

**ΔT = ; KS = ; ΔKS =**

1. **DEUX RESSORTS EN PARALLELE**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **m ( )** | **tm ( )** | **T ( )** | **T2 ( )** | **Kp ( )** | **ΔT ( )** | **ΔKp ( )** | **ΔKp/Kp (%)** |
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**tm = ; T = ; Δtm =**

**ΔT = ; Kp = ; ΔKp =**

Comparaison des résultats obtenus entre les deux méthodes statique et dynamique:

…………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………

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**CONCLUSION:**

…………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………