Gr:	*Last Name:*	
	First Name:	
	N°	

TP-3

SIMPLE PENDULUM

Experiment

I. Influence of the pendulum's length on the period

Report the results in Table 1.

$\theta_0=7°$, $n_1=10$				
L (cm)	*20*	*40*	*70*	*100*
$t_1=n_1T_1$ (s)				
$T_1=\frac{t_1}{n_1}$ (s)				
T_1^2 (s^2)				
$\frac{T_1^2}{4\pi^2}$ (s^2)				

$\theta_0=7°$, $n_2=30$				
L (cm)	*20*	*40*	*70*	*100*
$t_2=n_2T_2$ (s)				
$T_2=\frac{t_2}{n_2}$ (s)				
T_2^2 (s^2)				
$\frac{T_2^2}{4\pi^2}$ (s^2)				

Table 1

1. ***Draw the graph*** $L\left(\frac{T^2}{4\pi^2}\right)$ ***on millimeter paper.***

- Determination of the average value of g (graphical method):

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-Determination of the average value of g and calculation of its uncertainty:

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Comparison of the results of period T and the value of g for n_1 and n_2 :

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We can conclude that: .....

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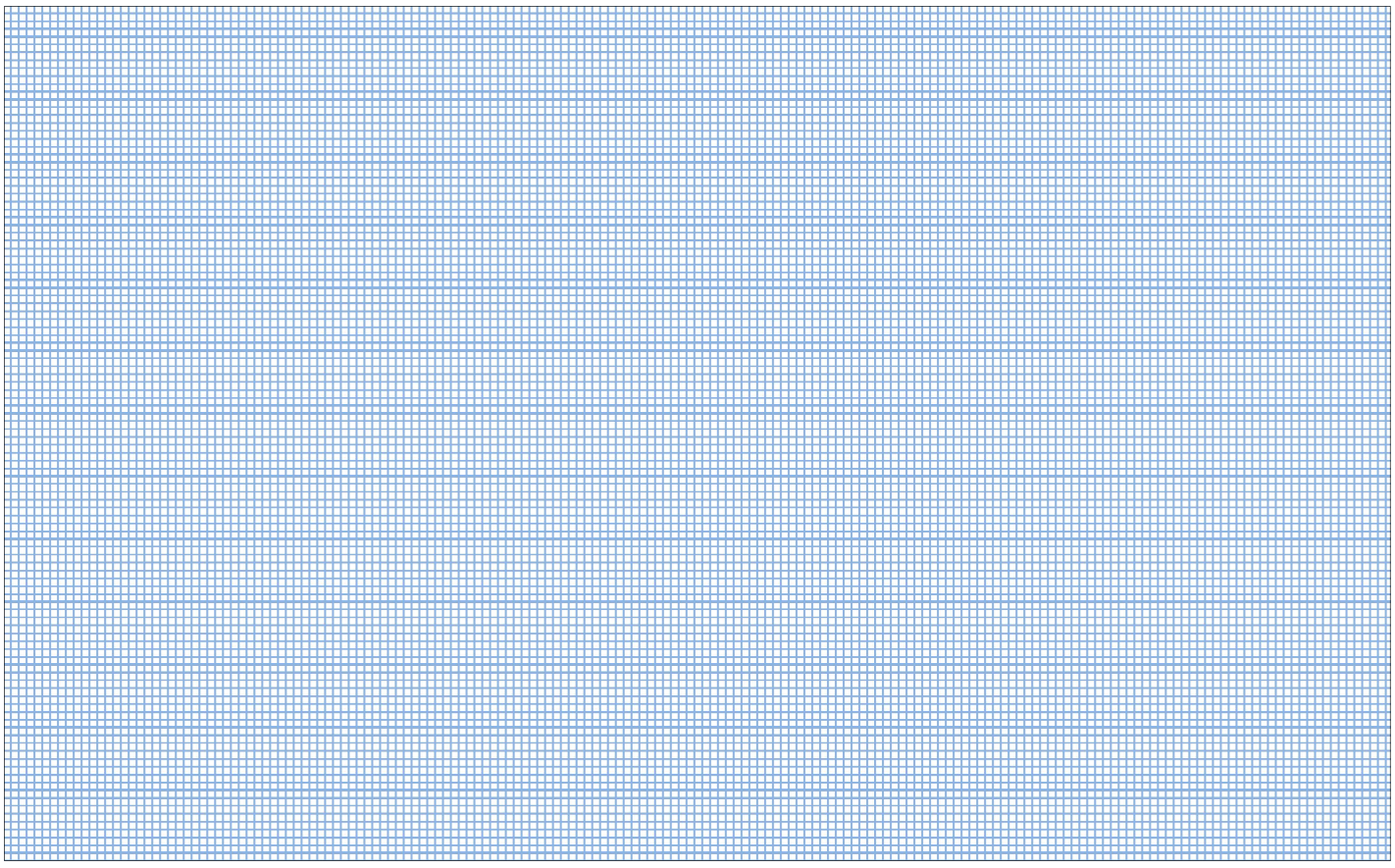
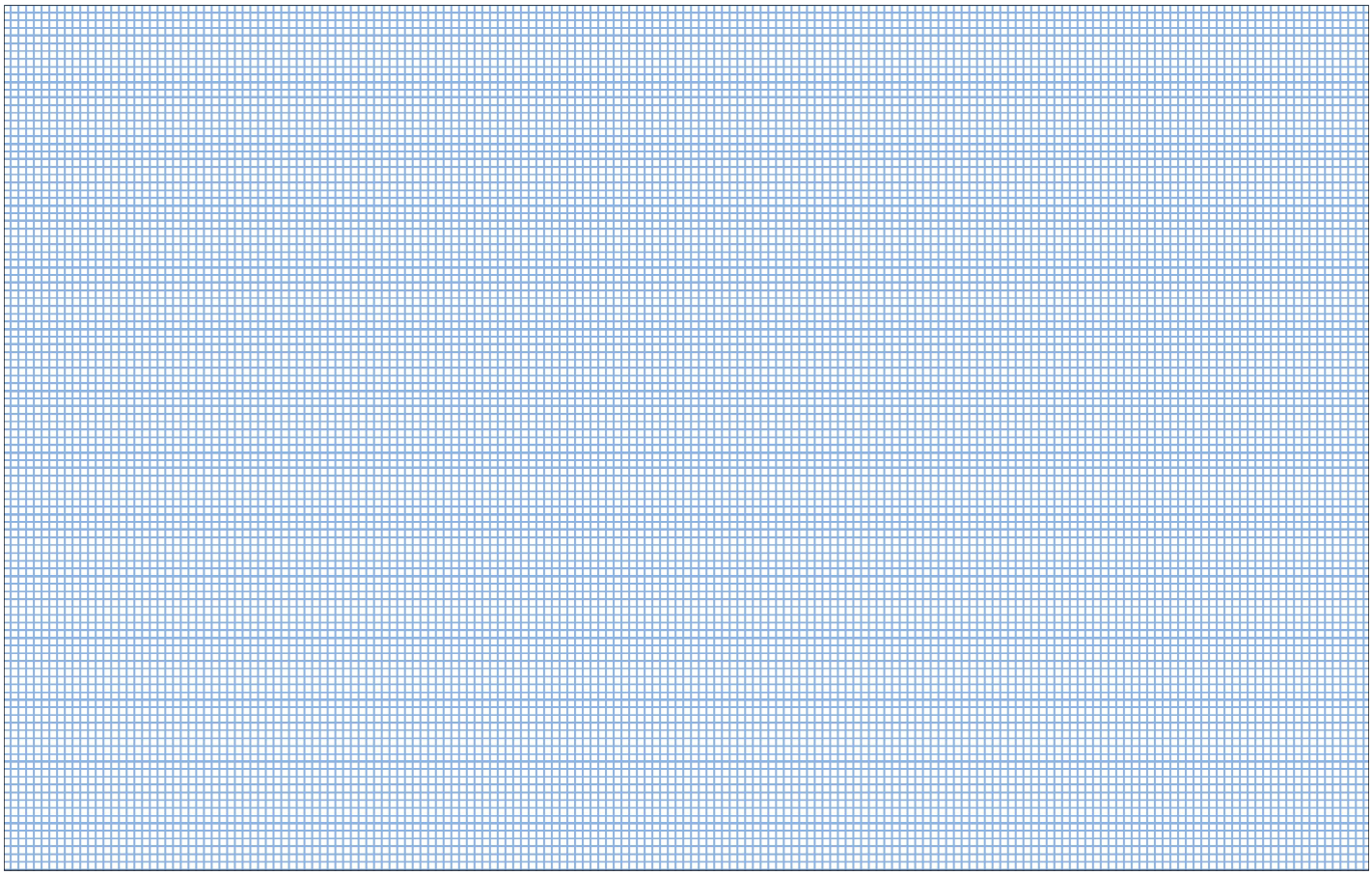
Graph 1: ***n_1=10***



Graph 2: $n_2=30$



II. Influence of the angle on the period

Report the results in Table 2.

$L = 40\ cm$, $n_1=10$					
θ_0 (°)	6°	8°	10°	30°	90°
$t_1=n_1T_1$ (s)					
T_1 (s)					

$L = 40\ cm$, $n_2=30$					
θ_0 (°)	6°	8°	10°	30°	90°
$t_2=n_2T_2$ (s)					
T_2 (s)					

Table 2

1. ***Calculate g analytically for the angles that allow the application of the formula*** $T = 2\pi\sqrt{\frac{L}{g}}$ ***and calculate its uncertainty δg:***

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2. **Does the variation of the angle θ_0 influence T and g?** □ ***NO*** □ ***YES***

3. **Interpretation of the results :**

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III. Conclusion

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