

Experiment 1: Determination of Balance of Forces with Cosine Theory

Purpose

This experiment is conducted to determine the balance of forces with cosine theory.

Equipments

1. Force table with 3 weights

Pre-Lab Questions

1. What would be the angles between the forces if there 3 equal forces.

Introduction and Theory

Cosine theory is practical formula for finding the resultant force two forces with given value of the angle between them.

Data Collection and Calculations

Show the results of the experiment

	Mass (g)	Force (N)	Angle
1			
2			
3			

Cosine Theory

$$F_{\text{RESULTANT}} = \sqrt{(F_1)^2 + (F_2)^2 + 2F_1F_2\cos\theta_{12}}$$

Error Finding

$$\% \text{Error} = ((F_{\text{RESULTANT}} - F_3) / F_{\text{RESULTANT}}) \times 100 =$$

Your Conclusion