

## 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