

# Lab 1: Vector Addition of Forces

Physics 1310 Section

TA: Rebecca Proni

By: Your Name Here

Lab Partners: Partner 1, Partner 2, Partner 3

## 1 Introduction

Write a concise paragraph to introduce this lab to your peers. It must include the objective(s) of the lab.

## 2 Methods

Write a concise paragraph for each part of the lab to describe to your peers what measurements were taken and how they were taken.

## 3 Data

Raw data must be separated from results when tables are indicated, they must have captions, and their columns must have headers that include units. **All data must have units.**

Case	$\theta$ (degrees)	mass (g)
1		
2		
3		

Figure 1: Put your data here in a table.

## 4 Analysis

Write a sample calculation for each required result that you are obtaining. Your results must be consistent with your data. When plots are indicated, make sure that they have labels, units, and captions. Are the results consistent with the data collected?

Example of referencing an equation: The magnitude of the vectors was calculated using Equation 1:

$$|\mathbf{F}| = \sqrt{F_x^2 + F_y^2} \quad (1)$$

Example of referencing figures: Graphs were made to graphically represent the addition of vectors for case I (figure 2), case II (figure 3), and case III figure 4).

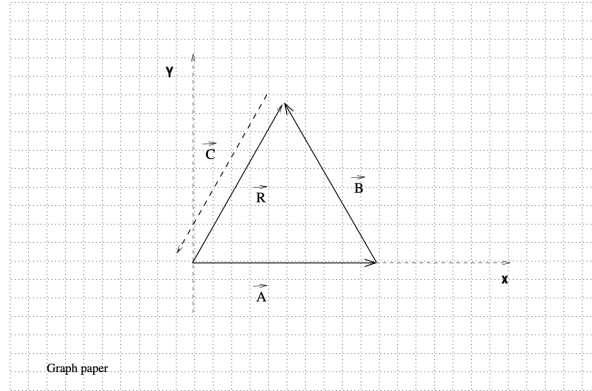


Figure 2: Case III with  $\vec{A} = 0.98\text{N}$  at  $0^\circ$ ,  $\vec{B} = 0.686\text{N}$  at  $60^\circ$ , the resultant vector  $\vec{R} = 1.450\text{N}$  at  $24^\circ$ , and the vector  $\vec{C} = 1.450\text{N}$  at  $204.18^\circ$ .

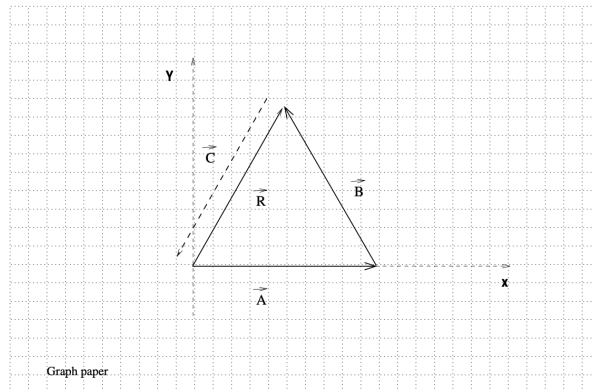


Figure 3: Case III with  $\vec{A} = 0.98\text{N}$  at  $0^\circ$ ,  $\vec{B} = 0.686\text{N}$  at  $60^\circ$ , the resultant vector  $\vec{R} = 1.450\text{N}$  at  $24^\circ$ , and the vector  $\vec{C} = 1.450\text{N}$  at  $204.18^\circ$ .

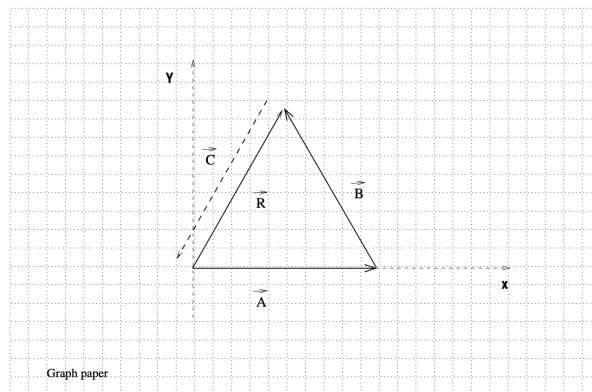


Figure 4: Case III with  $\vec{A} = 0.98\text{N}$  at  $0^\circ$ ,  $\vec{B} = 0.686\text{N}$  at  $60^\circ$ , the resultant vector  $\vec{R} = 1.450\text{N}$  at  $24^\circ$ , and the vector  $\vec{C} = 1.450\text{N}$  at  $204.18^\circ$ .

## 5 Conclusion

Discuss your results: did they reflect your purpose and goals from your introduction? The results from the experimental section might be slightly off from what you calculated mathematically, include why you think

this might be so.

Include a numerical discussion of results, including error analysis. Include an explanation of what you think might have led to the error, do not just put 'human error'.