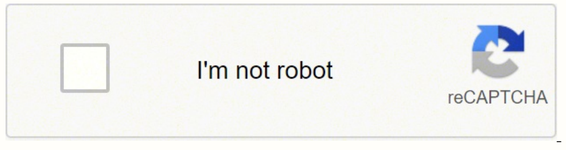

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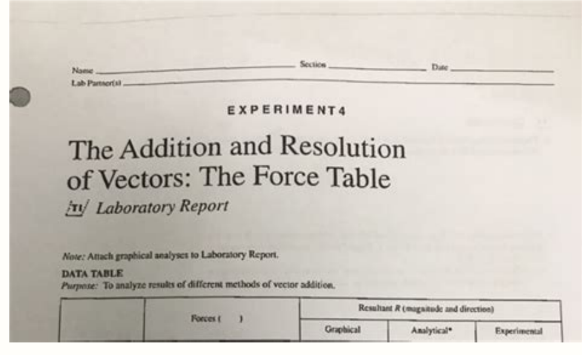
Vector addition of forces lab report discussion



Name ______ Section ______ Date ______
Lab Partner(s) ______

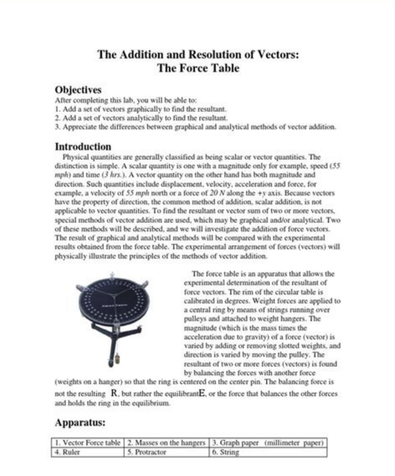
EXPERIMENT 4

The Addition and Resolution of Vectors: The Force Table

Laboratory Report

Note: Attach graphical analyses to Laboratory Report.
DATA TABLE
Purpose: To analyze results of different methods of vector addition.

	Forces ( )	Resultant R (magnitude and direction)		
		Graphical	Analytical*	Experimental



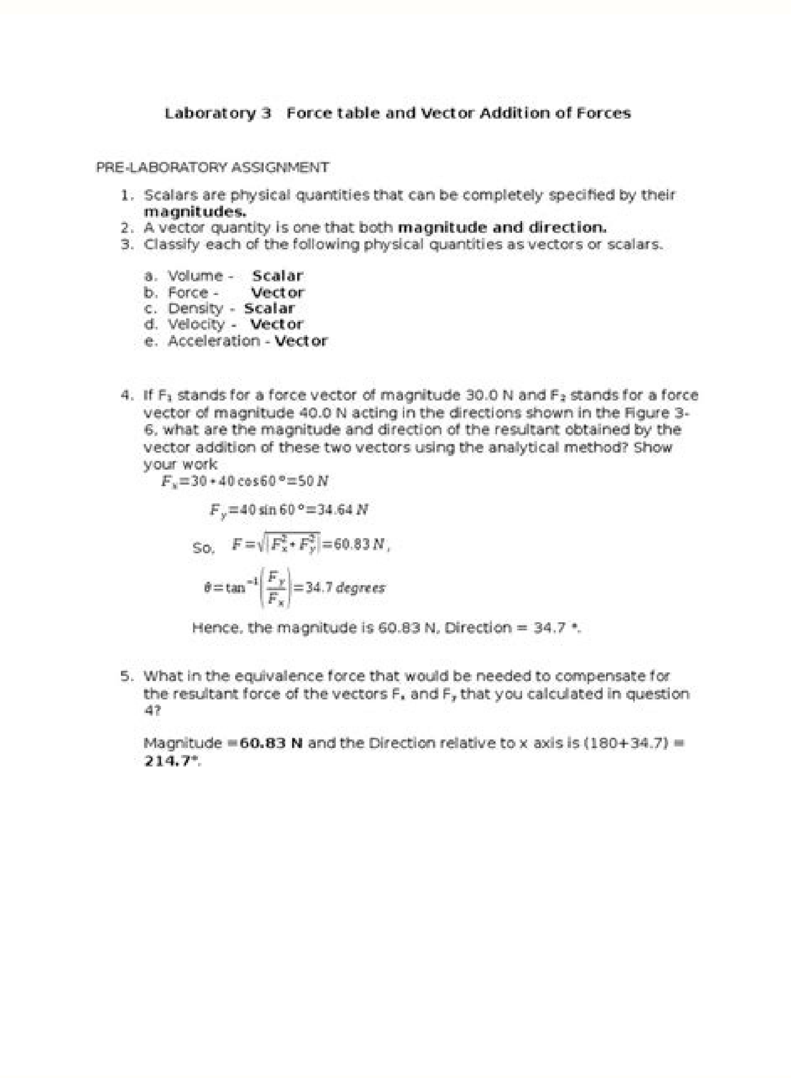
The Addition and Resolution of Vectors:
The Force Table

Objectives
After completing this lab, you will be able to:
1. Add a set of vectors graphically to find the resultant.
2. Add a set of vectors analytically to find the resultant.
3. Appreciate the differences between graphical and analytical methods of vector addition.

Introduction

Apparatus:

1. Vector Force table	2. Masses on the hangers	3. Graph paper (millimeter paper)
4. Ruler	5. Protractor	6. String



Laboratory 3 Force table and Vector Addition of Forces

PRE-LABORATORY ASSIGNMENT

1. Scalars are physical quantities that can be completely specified by their **magnitudes.**
2. A vector quantity is one that both **magnitude and direction.**
3. Classify each of the following physical quantities as vectors or scalars.

   a. Volume - **Scalar**
   b. Force - **Vector**
   c. Density - **Scalar**
   d. Velocity - **Vector**
   e. Acceleration - **Vector**

4. If F_1 stands for a force vector of magnitude 30.0 N and F_2 stands for a force vector of magnitude 40.0 N acting in the directions shown in the Figure 3-6, what are the magnitude and direction of the resultant obtained by the vector addition of these two vectors using the analytical method? Show your work

   $F_x = 30 + 40\cos 60° = 50\,N$

   $F_y = 40\sin 60° = 34.64\,N$

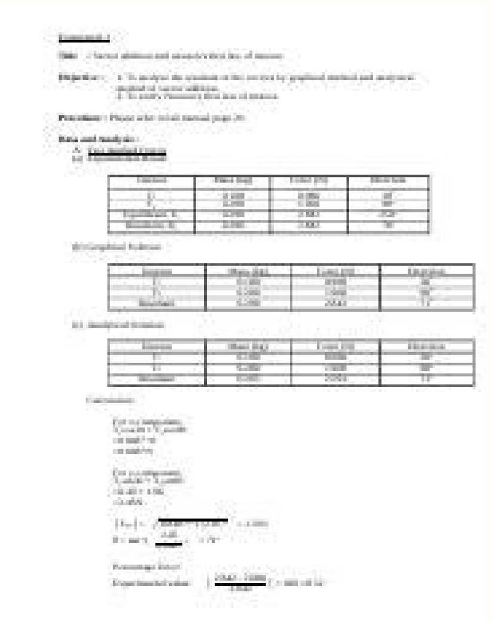
   So, $F = \sqrt{F_x^2 + F_y^2} = 60.83\,N$,

   $\theta = \tan^{-1}\left(\frac{F_y}{F_x}\right) = 34.7\ degrees$

   Hence, the magnitude is 60.83 N, Direction = 34.7 °.

5. What in the equivalence force that would be needed to compensate for the resultant force of the vectors F_x and F_y that you calculated in question 4?

   Magnitude =**60.83 N** and the Direction relative to x axis is (180+34.7) = **214.7°**.



Physics Lab Report Outline: Force Table Lab

Abstract

Introduction

Procedure

Results & Calculations

Conclusion

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30/10/2016 · Discussion. In this lab, we were asked to set up a force table as instructed on the lab manual before starting the actual experiment. We began the experiment by mounting a pulley on the 20C angle mark on the force table and hanging a total of 100 grams over it. ESC113 lab12 - lab report Preview text Forces as Vectors Kazi Sultana Professor Kibre Purpose: The addition and revolution of vectors experiment was based on finding the resultant of vector sum of two or more vectors by methods of vector addition. Lab Report vector addition pedro castineira, heidis alonso, raysa mercedes miami dade campus phy2048l february 2018 vector addition vectors are physical A lab report of forces being in equilibrium Essay on Blalawriting.com - The purpose of this lab was to understand equilibrium. To do this, you must find the equilibrant of the resultant of three vectors, both mathematically 13/08/2021 · All groups and messages ... ... 27/06/2018 · Download word doc: lab 2 Lab 2 Report Vector Addition of Forces Date Performed: 6/7/18 Date Due: 6/12/18 Physics 2100 Basic Physics I Laboratory Summer 2018 Purpose: Upon completion of this laboratory we should have a thorough understanding of adding forces to find the resultant force. This... All groups and messages ... ... 07/05/2013 · Addition of Vectors Objectives: The purpose of this experiment is to show that the magnitude and direction of the resultant of several forces acting on a particle may be determined by drawing the proper vector diagram, and that the ... Lab 2 vector addition - Grade: A. Course: Physics I (PHYS 131) Addition of V ector Forces. Austin Glass (Partner: Jack McElligott) 2/8/17. ABSTRACT. V ectors are commonly used for differe nt forces by indicating size and direction of the force. There are two common ways to add vectors in order to determine the resultant—the graphical. Forces are vectors and as such, any operation that can be performed on vectors can be performed on force vectors. The addition of vectors is one such operation. The method of adding vectors graphically and analytically is discussed in the context of force vectors. A full completed physics lab report. All of the labs remain the same each year. vector addition of forces introduction: vector quantity is defined as quantity 07/05/2013 · Addition of Vectors Objectives: The purpose of this experiment is to show that the magnitude and direction of the resultant of several forces acting on a particle may be determined by drawing the proper vector diagram, and that the ...

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