

Name \_\_\_\_\_  
AP Physics  
Period \_\_\_\_\_

Date \_\_\_\_\_  
Lab #5  
Mrs. Nadworny

Partners:

Due Date \_\_\_\_\_

## Converging Lenses

**Lab Write-Up Required**  
use template from website

### Purpose

To determine the focal length of a convex lens

### Research Question

(1)

What is the relationship between the distance of an object to a lens and the distance of the produced image from the lens?

### Variables

(5)

- Independent Variable –
- Dependent Variable –
- Control Variable(s) –

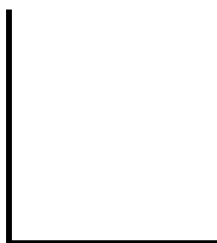
### Derivation of Mathematical Model (Include derivation)

(10)

### Expected Graph

### Straightened Graph (if needed)

(5)



Significance of Slope:

Expected y-intercept:

### Hypothesis

(3)

## Experimental Procedure

- **Materials**

- Optical bench
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- **Labeled Diagram**

(2& 3)

- **Method**

(5)

Discuss with your lab partners an appropriate method for collecting sufficient data and for keeping the control variables constant.

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## Data Collection

(15)

Make a clearly labeled table using a RULER and PENCIL for organizing the raw and processed data that you expect you will collect.

## Data Processing

(25)

In space below, include an analysis of the data collected above, including sample calculations of processing the data, graphs of your data, calculations for determining the experimental relationship, comparisons to the math model, and a percent error with the accepted value. REFER TO THE LAB HANDOUT FOR SPECIFICS.

## Conclusion

(10)

TYPE a conclusion using the general format provided on the *LAB HANDOUT*.

## Evaluation

(5)

Discuss some relevant sources of uncertainty.

## Improvement

(5)

For each source of uncertainty listed above, state a practical way to reduce it in a future investigation.

(4)  
neatness