Name: _____ Group: _____ Date: _____

LAB 36 EXPERIMENT

FORMING IMAGES WITH A DIVERGING LENS

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Goal

Determine how characteristics of images obtained using a diverging lens vary according to object position.

1. What is the independent variable in this lab?

_____

2. What is the dependent variable in this lab?

_____

Hypothesis

I think that _____

because _____

_____

Materials

- diverging lens
- optical bench
- screen (white cardboard)
- small light bulb on base *or* candle
- 1-m ruler

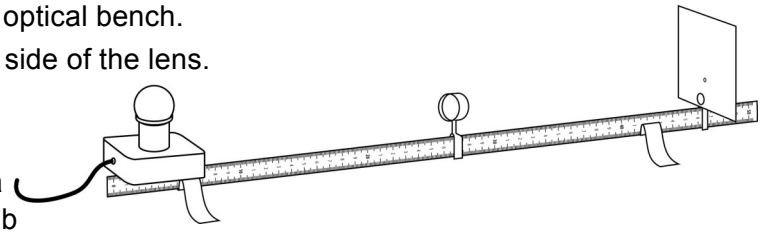
Procedure

1. Secure the lens at the centre of the optical bench.

2. Position the screen on the opposite side of the lens.

3. Measure and record the height of the light bulb and base.

4. Position the light bulb and base at a distance from the lens. The light bulb will serve as both light source and object.



5. Note the position of the light source (light bulb) in relation to the lens.

6. Move the screen until a clear image is obtained.

7. Observe and record the characteristics of the image.

8. Repeat steps 4 to 7 by positioning the light source at various locations.

9. Put away materials.

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Results

Record your results in the table below. Give the table a title.

Object size (cm):

Title:

Distance between object and lens (cm)	Image characteristics			
	Type (real or virtual)	Distance between image and lens (cm)	Size (cm)	Direction (straight, reversed or inverted)

Analysis of the results

1. What happens to the size of the image as an object is positioned closer to a lens?

_____

_____

2. Does the type of image obtained vary?

_____

_____

3. Does the direction of the image vary?

_____

_____

4. What are the possible sources of error in this lab?

_____

_____

5. How could you improve the protocol for this lab?

_____

_____

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Conclusion

1. Complete the following sentences:

a) The image obtained with a diverging lens is _____, in the same _____ and _____ than the object.

b) Image type and direction _____ on the _____ of an object in relation to a diverging lens.

2. Was your hypothesis confirmed or not? Explain your answer.

_____

Application

Why do the eyes of a person wearing glasses for short-sightedness seem smaller?

_____

_____

_____

_____

_____