



Pathfinder's Name

Optics

1. Define and/or draw a diagram of the following:

Focal length _____

Positive lens _____

Negative lens _____

Two kinds of distortion _____

Longitudinal color _____

Lateral color _____

Spherical aberration _____

Achromatic lens _____

Refraction of light _____

- 2. Explain how light behaves when it strikes or traverses water, oil, feldspar, and a mirror.

Water _____

Oil _____

Feldspar _____

Mirror _____

- 3. Name and draw diagrams of three kinds of positive lenses and three kinds of negative lenses.

Positive

1. _____ 2. _____ 3. _____

Negative

1. _____ 2. _____ 3. _____

- 4. What should be the minimum distance of light source from the lens when testing for focal length?

- 5. Find the focal length of at least four lenses, one being a negative lens.

1. _____ 3. _____

2. _____ 4. _____

- 6. Explain by diagram why an image from a positive lens makes an image reversed and inverted.

7. Show with diagrams how a prism works. State the angles at which the colors appear and disappear.

8. Show and demonstrate what happens when light strikes one-way glass.

9. Construct one optical instrument using mirrors or lenses, such as a periscope, a slide or opaque projector, or a simple telescope.

10. Explain what is meant by the term 6x35 and 7x50 as applied to binoculars.

11. Define the term "f/stop" as used in connection with cameras.

What does it mean when a lens is fast or slow?

Is an f/8.5 lens faster or slower than an f/8 lens?

Date completed _____

Instructor's Signature