Key terms to choose from for Questions 1 and 2:

A. law of reflection  B. focal length  C. real image
D. constructive interference  E. convex (converging) lens  F. dispersion
G. concave (converging) mirror  H. refraction  I. reflection
J. concave (diverging) lens  K. convex (diverging) mirror  L. virtual image

1. (2 points)
   a. An image through which no light rays actually pass _____________________
   b. The angle of incidence equals the angle of reflection ___________________

2. (2 points) Write the letter corresponding to a key term from above that best matches each description below.
   a. _____ An image that can be formed on a screen.
   
   b. _____ Lens thicker at the edge than at the center

3. (2 points) Circle the best answer for each of the following multiple choice questions.
   a. What happens when the polarization directions of two polarizing sheets are at an angle of 90° to each other?
      i) There is maximum transmission.
      ii) Maximum transmission is reduced by 50%.
      iii) No light gets through.
      iv) None of these.

   b. Which is true for a convex mirror?
      i) It forms only virtual images.
      ii) It is a converging mirror.
      iii) It forms magnified and reduced images.
      iv) It has a radius of curvature equal to f.

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4. (2 points) Fill in the blanks below.
   a. When light is reflected and none is refracted at an interface, this is called ______________ reflection.
   
   b. A convex mirror is commonly called a ______________ mirror.

5. (2 points)
   a. The speed of light in a particular material is $2.4 \times 10^8$ m/s. What is the index of refraction of the material?

   b. (Circle one of the answers in parentheses.) When light passes from plastic to air, it will be refracted (toward    away from    ) the normal.

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\text{Index of refraction} = \frac{\text{Speed of light in vacuum}}{\text{Speed of light in medium}}
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Speed of light in vacuum $= 3.0 \times 10^8$ m/s