Key terms to choose from for Questions 1 and 2:

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

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. _____ Lens thicker at the edge than at the center
   b. _____ An image that can be formed on a screen.

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) Maximum transmission is reduced by 50%.
      ii) No light gets through.
      iii) There is maximum transmission.
      iv) None of these.
   b. Which is true for a convex mirror?
      i) It is a converging mirror.
      ii) It forms only virtual images.
      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 $1.8 \times 10^8$ m/s. What is the index of
      refraction of the material?

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

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