

**Ray Diagrams**  
**Do the drawings on graph paper**

1. For a convex lens with a focal length of 4 cm, make a drawing for a 2 cm tall object that is \_\_\_\_ cm from the mirror. For each, note  $d_i$ ,  $h_i$ , real/virtual, upright/inverted.
  - a. 16
  - b. 12
  - c. 8
  - d. 4
  - e. 2
  
2. For a concave lens with a focal length of 4 cm, make a drawing for a 2 cm tall object that is \_\_\_\_ cm to the left of the mirror. For each, note  $d_i$ ,  $h_i$ , real/virtual, upright/inverted.
  - a. 16
  - b. 12
  - c. 8
  - d. 4
  - e. 2
  
3. For each of the above problems, show the mathematical solution for  $d_i$ ,  $h_i$ , real/virtual and upright/inverted.
  
4. For a concave mirror with a focal length of 4 cm, make a drawing for a 2 cm tall object that is \_\_\_\_ cm from the mirror. For each, note  $d_i$ ,  $h_i$ , real/virtual, upright/inverted.
  - a. 16
  - b. 12
  - c. 8
  - d. 4
  - e. 2
  
5. For a convex mirror with a focal length of 4 cm, make a drawing for a 2 cm tall object that is \_\_\_\_ cm to the left of the mirror. For each, note  $d_i$ ,  $h_i$ , real/virtual, upright/inverted.
  - a. 16
  - b. 12
  - c. 8
  - d. 4
  - e. 2
  
6. For each of the above problems, show the mathematical solution for  $d_i$ ,  $h_i$ , real/virtual and upright/inverted.