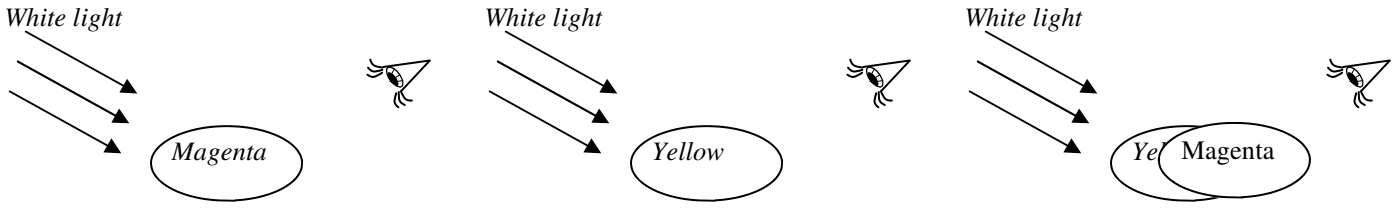
A-day: Due Fri., Mar 27
B-day: Due Mon., Mar 30

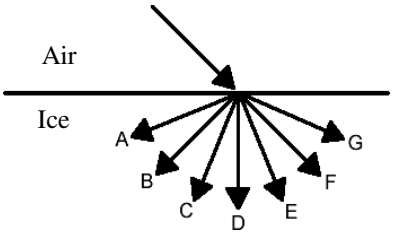
2009 Light 9

Name: _____



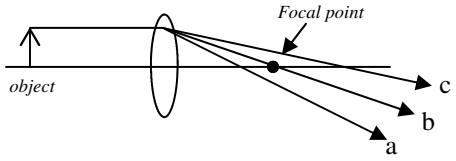
1. What three lights make up white light?
2. In order for us to see magenta,
   A. What light is reflected off the magenta (draw it)?
   B. So what color does magenta absorb?
3. A. What color or colors does yellow reflect?
   B. What color does yellow absorb?
4. So, if magenta and yellow paints are mixed,
   A. What two colors are absorbed?
   B. What color is reflected?

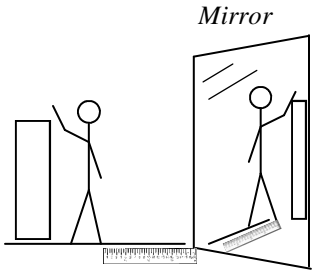
   This is how subtractive colors and CMYK works.
5. So, using the CMYK model, what two colors are necessary to make blue?



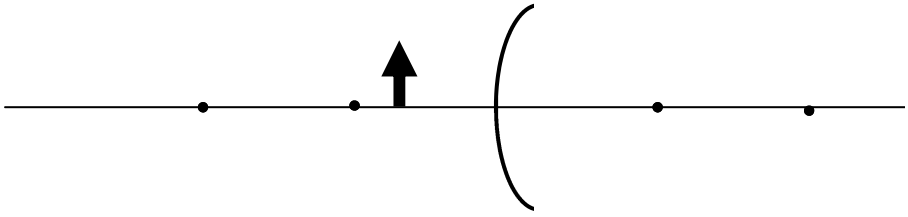
6. In Diagram A at the left.
   A. Is light going to speed up or slow down when it passes into ice?
   B. Will the wavelength of the light get longer or shorter in ice?
   C. Will the left or right side hit first?
   D. Circle which way it will refract.
   E. Did it bend toward or away from the normal?
   F. In what case would it not refract at all?

7. In the diagram at the right, to which letter will the light ray bend?



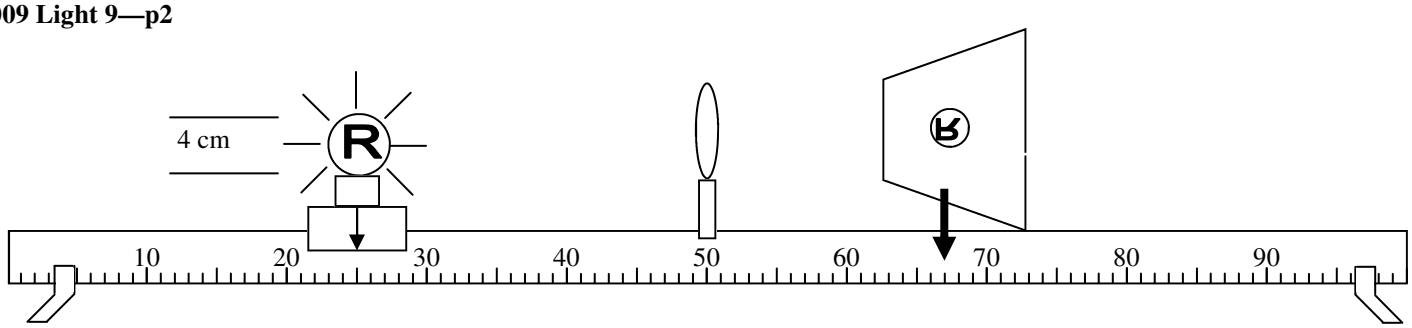


8. Slim Jim is standing in front of a flat mirror and has a meter stick between him and the mirror (he is one meter in front of the mirror).
   A. How far inside the mirror is his image?
   B. How far is Jim from his image?
9. Draw the ray diagram for the following mirror.
   A. What kind of mirror?
   B. Convergent or Divergent?
   C. Real or virtual focal point?



D. After you draw the diagram, describe the image.

(*new study help available that will walk you thru this.*)

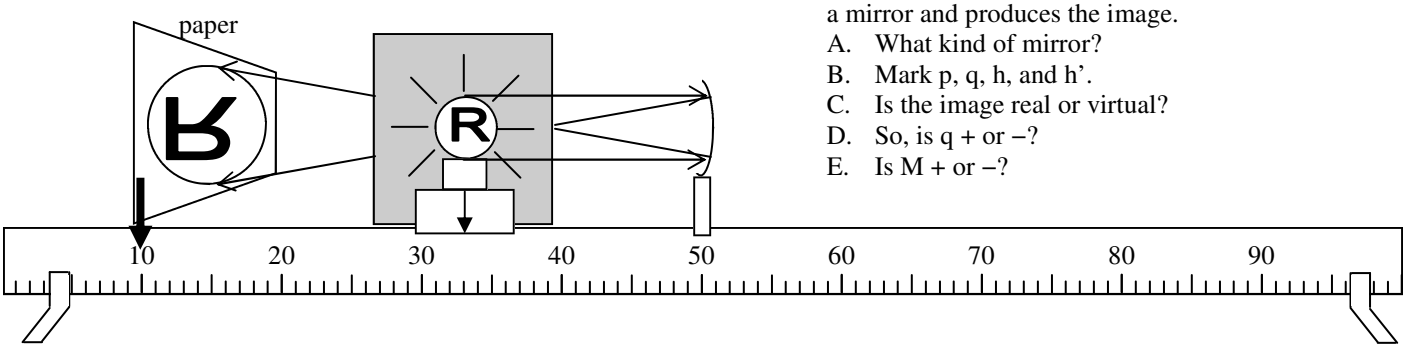


10. A. Calculate f, M, and h' for the above.

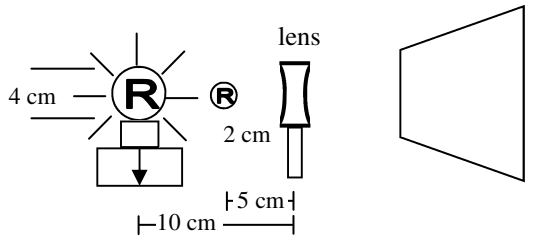
B. + or −? p ____, q ____, h ____, h' ____.

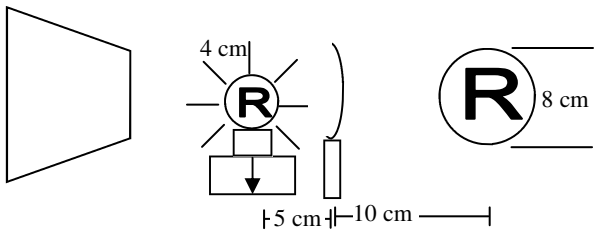
C. Is the object inside C or outside C?

11. In this diagram the same object reflects off of a mirror and produces the image.
    A. What kind of mirror?
    B. Mark p, q, h, and h'.
    C. Is the image real or virtual?
    D. So, is q + or −?
    E. Is M + or −?



Notice that in both of the previous examples when the image is real q is + (on the real side) , h' is negative (inverted), and M is negative. If the image is virtual, q is − and M and h' are +.





12. In the diagram above:
    A. p = B. q = C. h' =
    D. Is the image real or virtual?
    E. What kind of device?

13. In the diagram above:
    A. p = B. q = C. h' =
    D. Is the image real or virtual?
    E. What kind of device?
    (*Notice that the image is on the virtual side of the mirror*)

14. Are the following + or –?

A. ____ q if image is inverted.
B. ____ h
C. ____ h' if the image is upright
D. ____ f for a convergent device.
E. ____ h' if the image is on the right side of a mirror
F. ____ f for a convex mirror.
G. ____ q for a convex mirror.
H. ____ q if the image is on the left side of a lens
I. ____ h' if the image is on the right side of a lens.
J. ____ q if the image is on the left side of a mirror.
K. ____ M if the image is real.
L. ____ M if the image is virtual