Name _____ Hour _____

Light and Mirror Station Activity and Review

Station 1: Colorblindness (or color deficient) What are the hidden numbers?

_____ _____ _____

8% of guys and 0.5% of girls are colorblind in some form. Are you? _____

Why do you think it is more common for guys then girls to be color blind? Think back to biology with **genetics** and **sex-linked traits**: (Not on test, but interesting to know!)

Review of LIGHT:

1. Calculate the frequency of green light if it has a λ of 550 nm. (1 nm = 10^{-9} m)

2. Red light has a λ of 650 nm while purple is 450 nm. Which one has a greater frequency? What does it mean to have a greater frequency?

3. How many **meters** does light travel in a year? **MILES?**

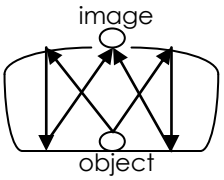
m = _____

miles= _____

Review of MIRRORS:

Station 2: Mirage Hologram

Look at the object in the black disc and try to touch it. Can you? Why not?



1. Which type of image can be projected? real / virtual
2. Is the **projected** Mirage Hologram image a real or virtual image? real / virtual
3. What type of mirror is inside the disc? Concave / Convex
4. Why can it **not be a convex mirror** inside the disc?

Name ____ Hour ____________________

Light and Mirror Station Activity and Review

Mirror Review: Know what the variables stand for!

1. A 1.5 cm tall light bulb is placed a distance of 2.0 cm from a **CONVEX** mirror with a focal length of 2.5 cm. Determine the image distance and size using **EQUATIONS**. (q= -1.1 cm, hi= 0.83 cm)

   q=

   hi=

2. A 2.5 cm tall plastic pig is placed a distance of 5.0 cm from a **CONCAVE** mirror with a focal length of 2.5 cm. Determine the image distance and size using **EQUATIONS**. (q=5 cm, hi= -2.5 cm)

   q=

   hi=

3. A 1.2 cm tall plastic pig is placed a distance of 4 cm from a mirror which has a focal length of 1.5 cm. Determine the image distance and height using a **scaled ray diagram for BOTH types of mirrors**.

   CONVEX (q= -1.1 cm, hi= 0.33 cm) **CONCAVE** (q= 2.4 cm, hi= -0.72 cm)

   q=

   hi=

   q=

   hi=

4. **Other MIRROR stuff to know:**
   a. An object is 1.2 cm tall. If the hi is -4 cm, what is the magnification? ___________

   b. Does a negative magnification mean an object is upright or inverted?

   c. If an object's magnification is 0.4, what does this mean?________________________

   d. If the f= -2.5 cm, what type of mirror is it? ______________________________________

   e. If the hi is **smaller and upright,** what type of mirror is it? ________________________

   f. If the hi is **inverted**, what type of mirror is it? ___________________________________

   g. If the image is **real,** what type of mirror is it? __________________________________