Suppose you have a small brightly lit bulb, a mask (a cardboard screen with a small circular hole cut in it), and a screen. You see a small circle of light on the screen. What would happen to the spot if you moved the bulb straight upward a bit?

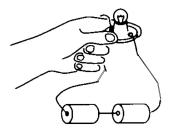


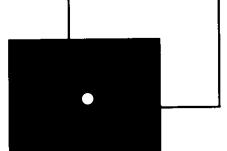
1. The spot would stay where it was.

2. The spot would move up a bit.

- 3. The spot would move down a bit.
- 4. The spot would move left a bit.
- 5. The spot would move right a bit.
- 6. Something else



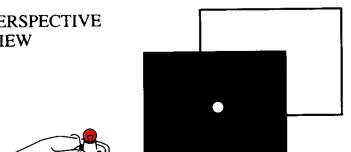




Suppose you have two lit bulbs, the top one red and the bottom one blue, a mask (a cardboard screen with a small circular hole cut in it), and a screen, as shown. What would you see on the screen if you held the bulbs one over the other as shown?



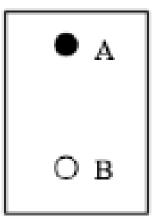
- A. One purple circle.
- B. Two circles, one above the other with the top one red the lower one blue.
- C. Two circles, one above the other with the top one blue, the lower one red.
- D. Something else.

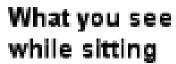


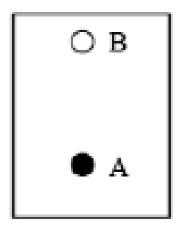
You are sitting in a chair looking at two objects that are suspended from the ceiling. It appears to you that object A is above object B. When you stand up, object A appears to be below object B. Which of the two objects is farther away from you?



- A. Object A
- B. Object B
- C. They are both the same distance.
- D. You can't tell. It could be either one







What you see while standing



I once observed a woman on an airplane at night with a camera. As we flew low over Washington DC she was impressed with the view of the city lights in the dark. She stood back in the aisle and tried to take a picture through the window using her flash. Explain why this is a bad idea and what her pictures are likely to show.



## An observer O, facing a mirror, observes a light source S. Where does *O* perceive the mirror image of *S* to be located?



- 1. 1
- 2. 2
- 3. 3
- 4. 4
- 5. Some other location
- 6. O cannot see S in the mirror when they are as shown.

