

Question 1

A person who is farsighted needs to observe an ant which is closer than that person's near point. This can be accomplished by placing a lens in front of the eye. The lens must produce an image of the ant which is upright and further from the lens than the ant.

Which arrangement will accomplish this?

1. A concave lens placed so that the ant is beyond the focal point of the lens.
2. A concave lens placed so that the ant is between the lens and its focal point.
3. A convex lens placed so that the ant is beyond the focal point of the lens.
4. A convex lens placed so that the ant is between the lens and its focal point.

Warm Up Question 1

A magnifying glass provides a certain angular magnification, when the object is located near to the focal point of the lens. In order to attain a larger angular magnification, would one use a lens with a larger or smaller focal length? Explain your answer.

1. Larger.
2. Smaller.

Warm Up Question 2

In many microscopes it is possible to switch between different objective lenses, having different focal lengths. Suppose that one switches to an objective lens with a smaller focal length. The object location is adjusted so that it is again just beyond the focal point of the objective. How will the position of the eyepiece lens have to be adjusted (no change, closer or further from objective lens) to produce the correct image? Explain your answer.

1. Moved closer.
2. Moved further.
3. Same location.