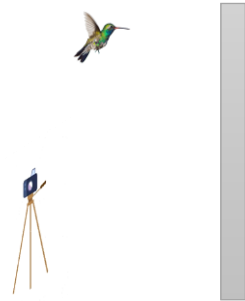


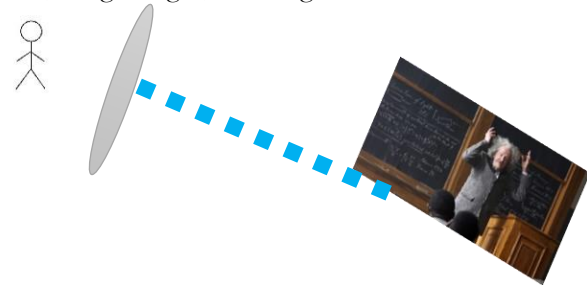
Discussion Week 13 Question 1

As you wake up in the morning, you decide to go for a 10-mile hike before physics class, and of course you bring along your camera bag with various lenses and mirrors to take photos for your National Geographic award winning photo blog. You set your camera 4 meters in front of your mirror to take a picture of a hummingbird that is 12 meters to your left and 3 meters in front of the mirror. What is the apparent position of the bird in the mirror and the apparent distance from the camera?



Discussion Week 13 Question 2

Instead of walking the 7 flights of stairs to your physics lecture hall after your hike, you decide to go into the neighboring biology building and walk up the 20 flights of stairs. Your goal is to use your handy convex lens to look through a window from the top floor of the bio building into a window of the physics building with a line of sight to your physics professor's whiteboard. If the focal point of your lens is 2 meters and the distance between the white board and the lens is 30 meters, what is the image distance, image height, and magnification of the 1.5-meter-tall chalkboard?



Discussion Week 13 Question 3

Finally, you go the long way home and swim the 5 miles to your apartment. While swimming, you realize there is a concavity in the water floor, causing a curvature in the surface of the river that behaves like a concave mirror of radius 0.5 meters. You leap and see your reflection in the mirror is 5 times the size of you, how high did you leap out of the water while imitating a dolphin?

