Problems discussed in the video series:

Videos (3) – (4)
1. Suppose that you want to take a photograph of yourself as you look at your image in a flat mirror 2.5m away. For what distance should the camera lens be focused?

Video (7)
7. A solar cooker, really a concave mirror pointed at the Sun, focuses the Sun's rays 18cm in front of the mirror. What is the radius of the spherical surface from which the mirror was made?

Video (9)
11. We want to use a mirror to make a virtual, upright image, magnified 4.5 times, which is located 2.2cm from the mirror. What type of mirror should we use, with what radius of curvature?

Video (10)
15. For a concave mirror, where should we place the object so that its image is in the same location as the object? What type of image will we get?

Video (14)
25. The speed of light in a certain substance is 89 percent of its value in water. What is the index of refraction of this substance?

Video (15)
27. A diver shines a flashlight upward from beneath the water at a 45° angle to the vertical. At what angle does the light leave the water?