Problems discussed in the videos:

Videos (1) – (2)
A spherical concave mirror is used in the back of a car headlight. Where must the bulb of the headlight be located to produce a parallel beam of reflected light?

Video (2)
An object .080 meters high is placed .20 meters from a converging (convex) lens. If the distance from the image to the lens is .40 meters, what is the height of the image?

Video (3)
A diverging (concave) lens can form images that are…?

Video (3)
A ray of light strikes a plane mirror at an angle of incidence equal to 35 degrees. What is the angle between the incidence ray and the reflected ray?

Video (4)
Compared to the wavelengths of visible light, the wavelengths of UV light are…?

Video (4)
What is the speed of light in a medium having an index of refraction of 2.3?

Video (4)
A wave completes one vibration as it moves a distance of 2 meters at a speed of 20 meters per second. What is the frequency of the wave?

Video (5)
What is the period of a wave, if 20 crests pass an observer in 4 seconds?

Videos (6)-(9)
The length of a spaceship is measured to be exactly ¼ its rest length.
(A) To three significant figures, what is the speed parameter $\beta$ of the spaceship relative to the observer's frame?
(B) By what integer factor do the spaceship's clocks run slow, compared to clocks in the observer's frame?