

2. The bird is a distance  $d_2$  in front of the mirror; the plane of its image is that same distance  $d_2$  behind the mirror. The lateral distance between you and the bird is  $d_3 = 5.00$  m. We denote the distance from the camera to the mirror as  $d_1$ , and we construct a right triangle out of  $d_3$  and the distance between the camera and the image plane ( $d_1 + d_2$ ). Thus, the focus distance is

$$\begin{aligned} d &= \sqrt{(d_1 + d_2)^2 + d_3^2} \\ &= \sqrt{(4.30 \text{ m} + 3.30 \text{ m})^2 + (5.00 \text{ m})^2} \\ &= 9.10 \text{ m} . \end{aligned}$$