The concave mirror shown above has a focal length of 20 centimeters. An object 3 centimeters high is placed 15 centimeters in front of the mirror.

(a) Using at least two principal rays, locate the image on the diagram above.

(b) Is the image real or virtual? Justify your answer.

(c) Calculate the distance of the image from the mirror.

(d) Calculate the height of the image.