Concave and convex Mirror questions - Construct optical diagrams to answer these questions

Q1. An object 1.4 cm tall is positioned 12 cm from a **concave mirror**. If the radius of curvature of the mirror is 8.0cm, determine the characteristics of the image (whether it is real or virtual, upright or inverted) and find:

(i) the size of the image
(ii) its distance from the mirror
(iii) state its characteristics

Answer: (i) 0.7 cm (ii) 6.0 cm (iii) real and inverted

Q2. The focal length of a **concave mirror** is 5.0 cm. If an object 1.2 cm high stands 7.5 cm from the mirror determine the size and position of the mirror and state its characteristics.

Answer: 2.4 cm, 15 cm, real and inverted

Q3. As Q2 but the object is positioned 3.0 cm from the mirror.

Answer: 3.0 cm, 7.5 cm, virtual and upright

Q4. An object 1.4 cm high is placed 9.0 cm from a **convex mirror**. Given that the radius of curvature of the mirror is 12.0 cm, determine the characteristics of the image (whether it is real or virtual, upright or inverted) and find:

(i) the size of the image
(ii) its distance from the mirror
(iii) state its characteristics

Answer: (i) 2.8 cm (ii) 18 cm (iii) real and inverted

Q5. As Q4 but the object is positioned 3.6 cm from the mirror.

Answer: 3.5 cm, 9.0 cm, virtual and upright

Q6. A **convex mirror** of focal length 3.0 cm is used to view an object placed 12 cm in front of it. Where will the image be formed?

Answer: 2.4 cm behind the mirror

Q7. A pin of 9.0 cm stands in front of a **convex mirror** of focal length 6.0 cm. Find the position of the image formed.

Answer: 3.6 cm behind the mirror