

PART A: MULTIPLE CHOICE (10 MARKS)

Choose the best response in each case and place your answer in the appropriate space on your answer sheet.

1. An incident ray of light is initially normal to the surface of a plane mirror. The mirror is rotated until the angle between the incident and reflected rays is 30° . The mirror has been rotated through an angle of:

(a) 7.5° (b) 15°
(c) 30° (d) 45°

2. A white ceiling aids in the illumination of a room because of:

(a) absorption
(b) dispersion
(c) reflection
(d) refraction

3. Which of these objects would exhibit regular reflection?

(a) dry asphalt
(b) a sweater
(c) high-gloss paint
(d) dashboard in a car

4. A virtual image can never be:

(a) smaller than the object.
(b) larger than the object.
(c) captured on paper.
(d) upright if the object is upright.

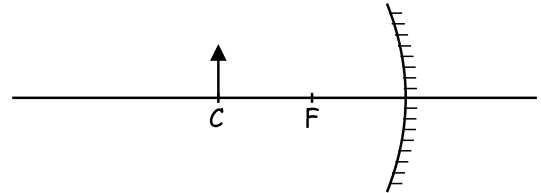
5. A ray of light travels through the centre of curvature of a spherical converging mirror. After reflection, the ray passes:

(a) back along its original path.
(b) through the principal focus.
(c) through the vertex.
(d) through the centre of curvature.

6. A light ray travels parallel to the principal axis of a converging mirror and hits the mirror. After reflection, the ray passes:

(a) back along its original path.
(b) through the principal focus.
(c) through the vertex.
(d) through the centre of curvature.

7. The diagram below shows an object positioned in front of a converging mirror. Which statement correctly describes the properties of the image that will be formed?



(a) upside-down, virtual, and smaller
(b) upside-down, real, and same size
(c) upright, virtual and larger
(d) upright, real and same size

8. Where must an object be placed with respect to a converging mirror in order to obtain a virtual image?

(a) At the focus.
(b) At the centre of curvature.
(c) At a distance greater than (b).
(d) Between the focus and the mirror.

9. Which of these types of images is not possible with a diverging mirror?

(a) an image that is smaller than the object
(b) an upside-down image
(c) a virtual image
(d) an image

10. As the distance of an object from a converging mirror decreases, the image:

(a) increases in size and moves away from the mirror.
(b) increases in size and moves toward the mirror.
(c) decreases in size and moves away from the mirror.
(d) decreases in size and moves toward the mirror.

PART A: MULTIPLE CHOICE (10 MARKS)

1	2	3	4	5	6	7	8	9	10
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PART B: MATCH (5 MARKS)

1	2	3	4	5
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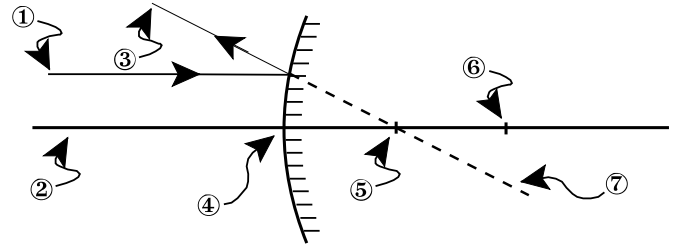
PART C: SHORT ANSWER (25 MARKS)

Answer the following questions in the space provided.

- {7} 1. (a) Match the labels below to the correct item in the diagram and then place the # in the space provided.
 (b) Number and name the remaining items.

- (a) ___ incident ray ___ centre of curvature
 ___ vertex ___ reflected ray

(b) _____



- {2} 2. List two applications of mirrors: ① _____
 ② _____

- {16} 3. Using ray diagrams (a) locate the images formed by the curved mirrors and (b) the type of image formed.

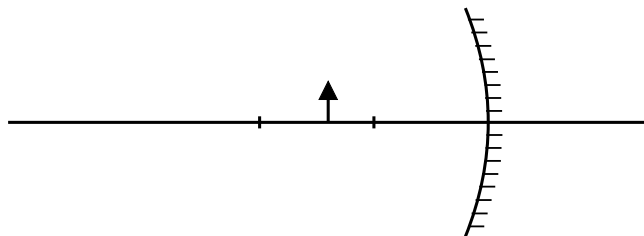


IMAGE:

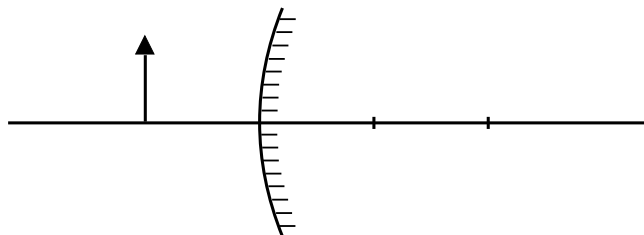


IMAGE:

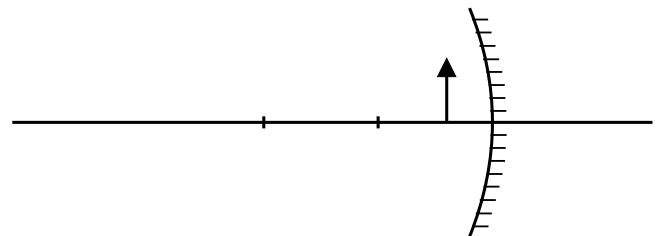


IMAGE:

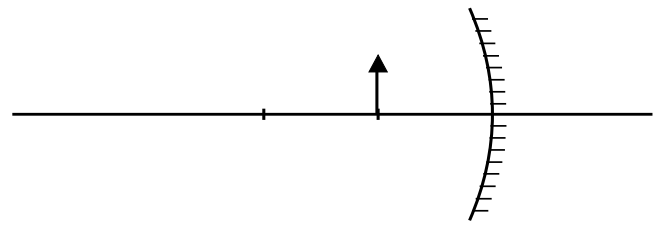


IMAGE:

PART D: PROBLEMS (10 MARKS)

Answer the following questions on a separate sheet of paper. You may use the back of this sheet if you wish.

- {3} 1. You have been asked to design the interior of a new speedboat. Do you think you should choose a smooth or rough surface for the dashboard? Why?
 {5} 2. Draw a view from above of an arrangement of mirrors that would allow you to see the back of your head. Mark the angles of incidence and reflection on your diagram.
 {2} 3. What would happen to the size of the image formed by a diverging mirror as the object moves closer to the mirror?