

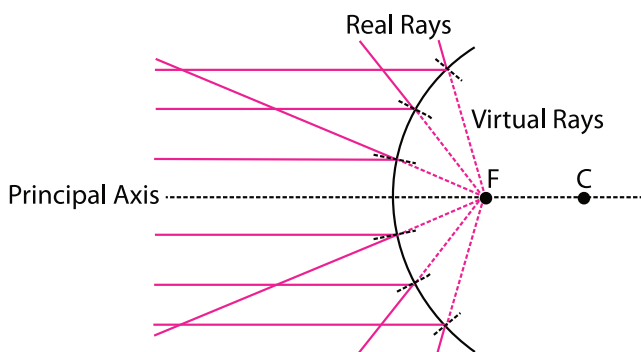
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## 41 Reflection – Convex Mirrors

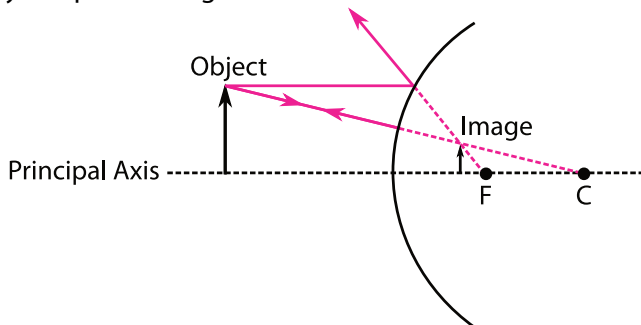
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The image formed from a convex mirror is always **upright**, **diminished** and **virtual**, regardless of where the object is placed.

Rays that are parallel to the principal axis reflect in a direction directly away from the focal point, which is **halfway between** the mirror and the centre of curvature for the mirror. When drawing ray diagrams, virtual rays can be drawn to correctly determine the path of the reflected rays.



As with concave mirrors, a ray incident on the mirror with an angle of incidence of zero (through the centre of curvature) will reflect in the opposite direction with zero angle of reflection. The virtual ray extrapolated from the incident ray will pass through the centre of curvature.

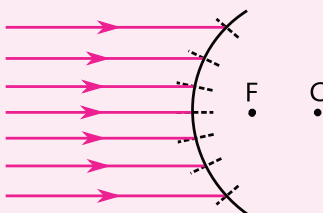


The two rules:

1. Rays which are incident in the direction of C reflect away from C.
2. Rays parallel to the principal axis reflect away from the virtual focal point.

For each of the questions, sketch a ray diagram.

- 41.1 Copy and complete the following ray diagram rays incident on a convex mirror, by drawing in the reflected rays at the correct angles.



- 41.2 An object 3.0 cm long is placed 10.0 cm from a convex mirror. The radius of curvature of the mirror is 14.0 cm. Use a scale diagram to measure:
- (a) The size of the image;
  - (b) Its distance from the mirror.
- 41.3 An object 1.5 cm long is placed 5.0 cm from a convex mirror. The radius of curvature of the mirror is 10.0 cm. Use a scale diagram to measure:
- (a) The size of the image;
  - (b) Its distance from the mirror.
- 41.4 Identify the similarities and differences between concave and convex mirrors.