

{6} **PART 1 - CONVERGING/DIVERGING MIRROR TERMINOLOGY (P.420 & 426)**

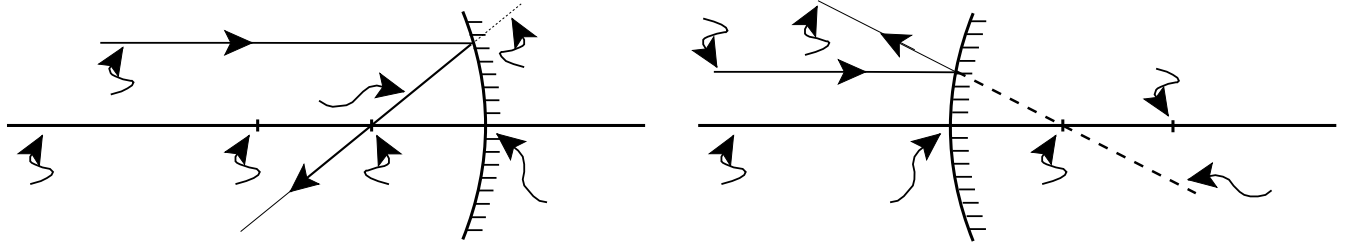
Locate the items below in the diagrams. Each diagram uses all the items once.

- ① Centre of curvature (C)
- ② Focus (F)
- ③ Incident Ray

- ④ Principal Axis (PA)
- ⑤ Reflected Ray
- ⑥ Vertex (V)

- ⑦ Virtual Ray

\* Be sure to label each type of mirror!

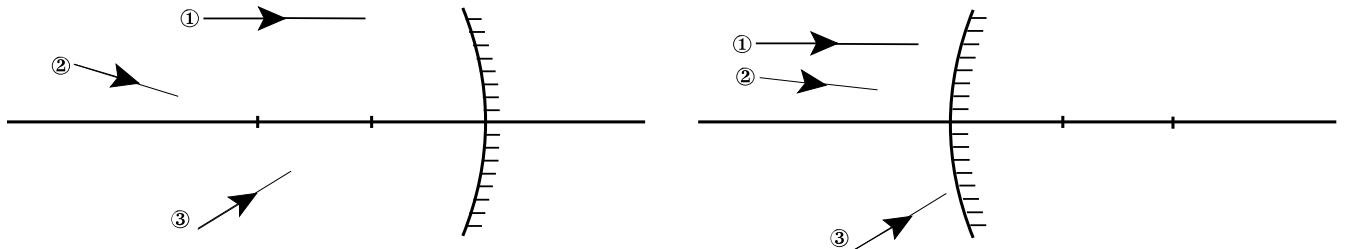


NOTE: The focus (F) for a mirror is always a point halfway between the vertex (V) and the centre of curvature (C).

{6} **PART 2 - CONVERGING/DIVERGING MIRROR RAY DIAGRAM RULES (P.420 & 426)**

Label C, F, and V on the following diagrams and then use the rules below to complete the incident/reflected/virtual rays.

- ① An incident ray that is parallel to the principal axis is reflected through (or appears to come from) the focus (F).
- ② An incident ray that passes through (or is directed toward) the centre of curvature (C) is reflected back onto itself.
- ③ An incident ray that passes through (or is directed towards) the focus (F) is reflected parallel to the principal axis.



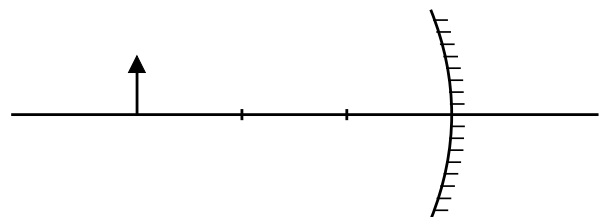
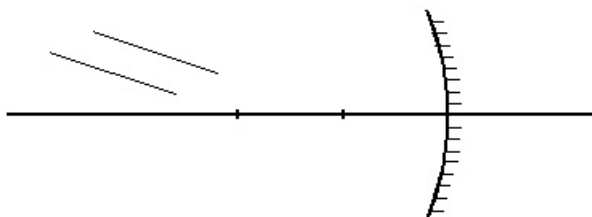
**PART 3 - RAY DIAGRAMS FOR CONVERGING MIRRORS (P.421 & 429)**

An object is located in front of a converging mirror in each of the following diagrams. Use the converging mirror ray diagram rules explained above to help locate the image formed. Describe the image formed (if any) in the table on the next page. Be sure to label C, F, and V on these diagrams as well.

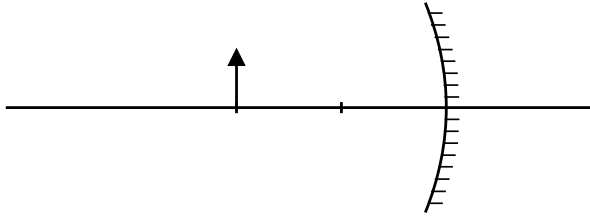
NOTE: The object (real) is always shown as a solid erect arrow. Any two rays are drawn from the tip of the object. The place where the rays intersect, or appear to do so after reflection, gives the location of the tip of the image. The third ray (if it can be used) serves as a check. A real image is always drawn as a solid arrow (because real rays were used to help locate it). A virtual image is always shown as a dotted arrow (because virtual rays were used to help locate it).

{7} ① **Distant object (rays parallel to each other)**

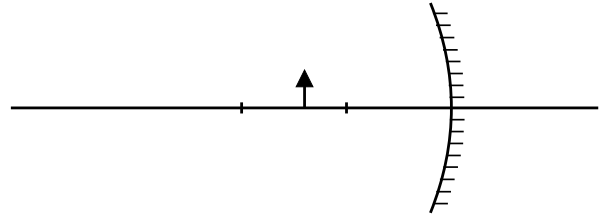
② **Object outside C**



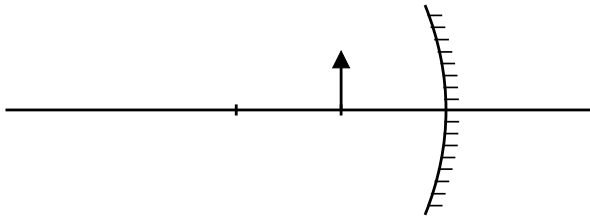
{7} ③ **Object at C**



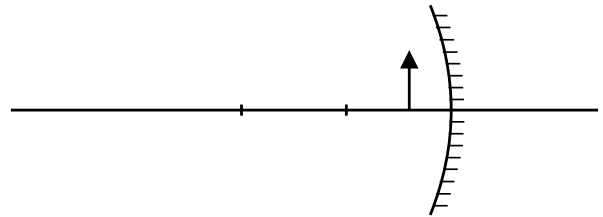
④ **Object between F and C**



{7} ⑤ **Object at F**



⑥ **Object between F and V**



{6}

Object Position	Image Characteristics for Converging Mirrors			
	Size	Attitude	Location	Type
① Distant				
② Outside C				
③ At C				
④ Between F and C				
⑤ At F				
⑥ Between F and V				

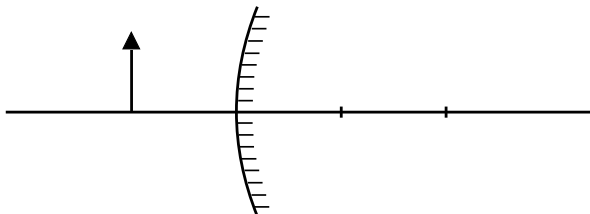
{3} Q1. What is important about the first ray diagram (i.e. a distant object)?

{3} Q2. What happens to the image as the object approaches the mirror from a distance?

**PART 4 - RAY DIAGRAMS FOR DIVERGING MIRRORS (P.426 & 429)**

An object is located in front of a diverging mirror in the following diagram. Use the diverging mirror ray diagram rules explained earlier to help locate the image formed. The image has already been described for you. Be sure to label C, F, and V on this diagram as well.

{5} ① **Object in front**



Unlike the converging mirror, which produces real or virtual images depending on the object's location, the diverging mirror produces only **virtual** images. These virtual images are all:

- ① erect
- ② smaller than the object, and
- ③ located between the vertex and the principal focus.