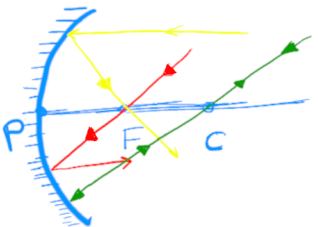
Spherical Mirrors

Rules of spherical mirror reflection

Concave mirror

1) A ray passing through the F, after reflection, will be parallel to principle axis.
2) A ray passing through C, after reflection, will reflect back in same path.
3) A ray parallel to the principle axis, after reflection, will travel through F.



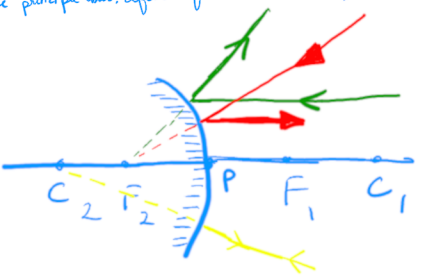
Laws of Reflection for spherical mirrors

Convex mirror

1) A ray aimed at F_2, after reflection, will be parallel to principle axis.

2) A ray aimed at C_2, after reflection, will reflect in same path

3) A ray parallel to the principle axis, after reflection would travel in the opposite direction of the imaginary ray aimed at F_2



Concave mirrors

	Object location	Type	Size	Location	Erect / Flipped
1	at ∞	real	∞ diminished	at F	inverted
2	beyond C	real	diminished	between F and C	inverted
3	At C	real	same size	at C	inverted
4	between F & C	real	magnified	beyond C	inverted
5	At F	real	∞ magnified	at ∞	inverted
6	between F and P	virtual	magnified	behind mirror	erect

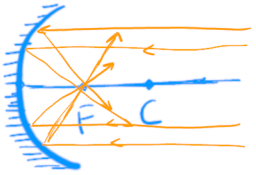
Convex mirror

	Object Location	Type	Size	Location	Erect / Inverted
case 1	at ∞	virtual	∞ diminished	at F_2	inverted
case 2	beyond C	virtual	diminished	between F_2 & P	erect
	At C	virtual	diminished	between F_2 & P	erect
	between F & C	virtual	diminished	between F_2 & P	erect
	At F	virtual	diminished	between F_2 & P	erect
	between F and P	virtual	diminished	between F_2 & P	erect

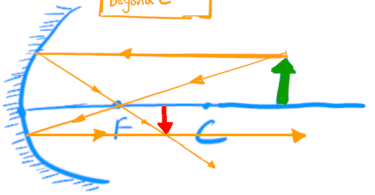
Diagrams

Concave

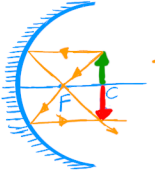
1) At ∞



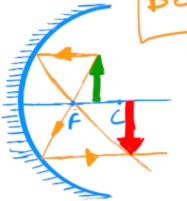
2) Beyond C



3) At C

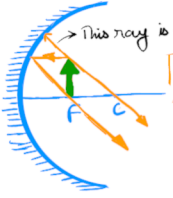


4) Between F & C

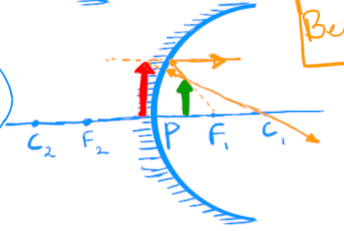


5) → This ray is going back in the same direction

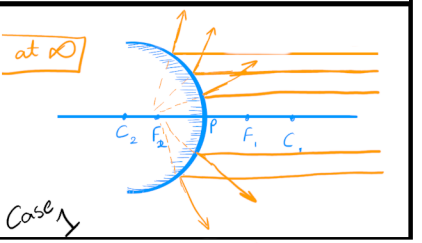
At F

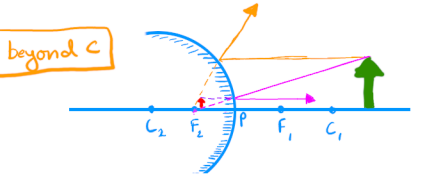


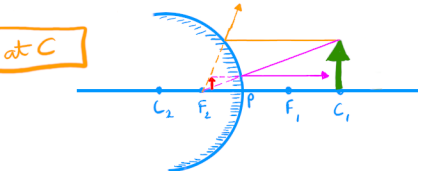
6) Between F_1 & P



Convex Diagrams







Case 2