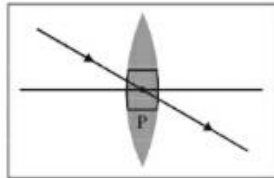


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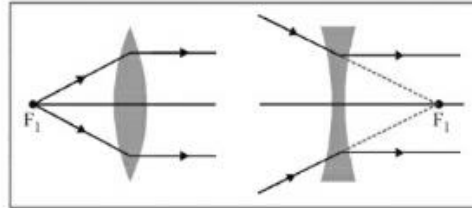
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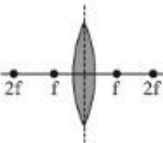
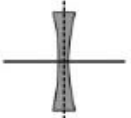
2. A ray through the optical centre P passes undeviated because the middle of the lens acts like a thin parallel-sided slab.



3. A ray passing through the first focus F_1 become parallel to the principal axis after refraction.



6.3 Image formation by Lens

Lens	Location of the object	Location of the image	Nature of image		
			Magnification	Real virtual	Erect inverted
Convex 	At infinity i.e. $u = \infty$	At focus i.e. $v = f$	$m < 1$ diminished	Real	Inverted
	Away from $2f$ i.e. ($u > 2f$)	Between f and $2f$ i.e. $f < v < 2f$	$m < 1$ diminished	Real	Inverted
	At $2f$ or ($u = 2f$)	At $2f$ i.e. ($v = 2f$)	$m = 1$ same size	Real	Inverted
	Between f and $2f$ i.e. $f < u < 2f$	Away from $2f$ i.e. ($v > 2f$)	$m > 1$ magnified	Real	Inverted
	At focus i.e. $u = f$	At infinity i.e. $v = \infty$	$m = \infty$ magnified	Real	Inverted
	Between optical centre and focus, $u < f$	At a distance greater than that of object $v > u$	$m > 1$ magnified	Virtual	Erect
Concave 	At infinity i.e. $u = \infty$	At focus i.e. $v = f$	$m < 1$ diminished	Virtual	Erect
	Anywhere between infinity and optical centre	Between optical centre and focus	$m < 1$ diminished	Virtual	Erect