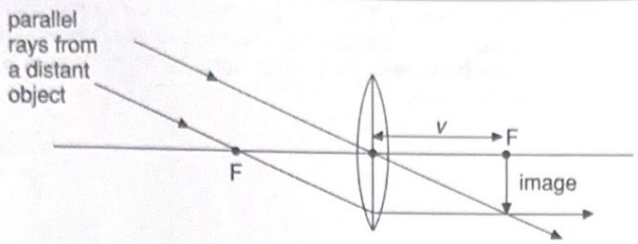
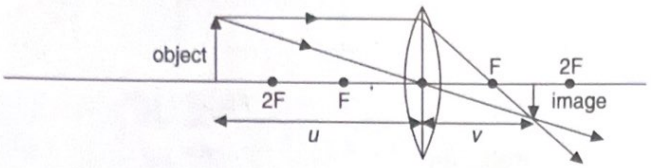
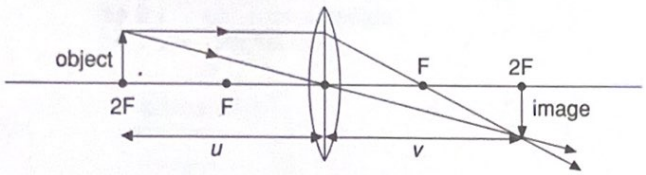
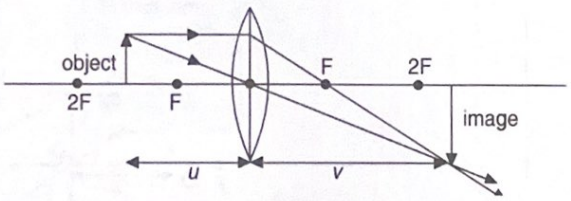
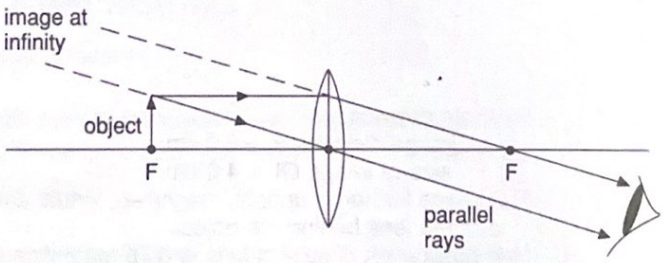
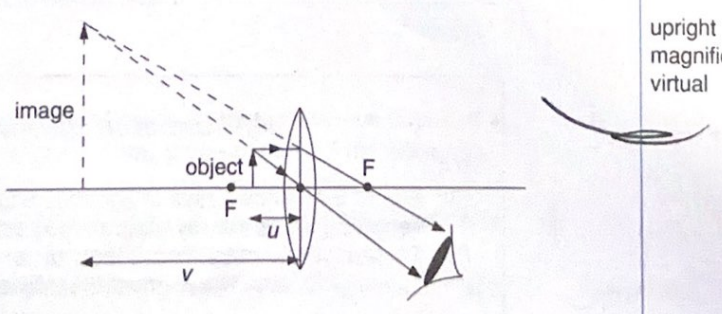
Table 9.7 Images formed by a thin converging lens

Object distance (u)	Ray Diagram	Type of image	Image distance (v)	Uses
$u = \infty$		inverted real diminished	$v = f$ opposite side of the lens	objective lens of a telescope
$u > 2f$		inverted real diminished	$f < v < 2f$ opposite side of the lens	camera; eye
$u = 2f$		inverted real same size	$v = 2f$ opposite side of the lens	photocopier making equal sized copy
$f < u < 2f$		inverted real magnified	$v > 2f$ opposite side of the lens	projector; photograph enlarger
$u = f$		upright magnified virtual	image at infinity; same side of the lens	to produce a parallel beam of light, as in a spot light
$u < f$		upright magnified virtual	image is behind the object; same side of the lens	magnifying glass