Parabola in Car Headlights

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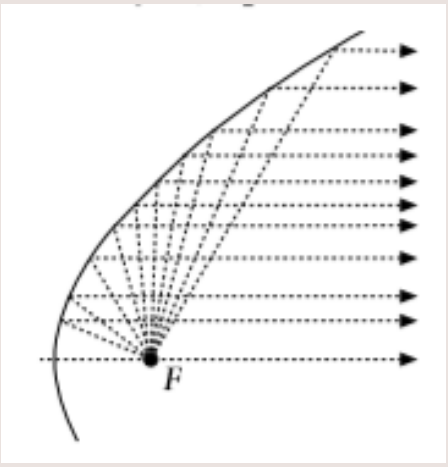
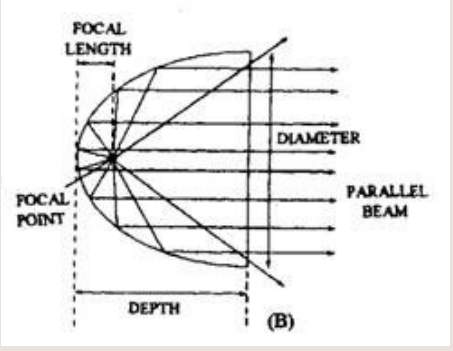
The two focal points in the ellipse are one in the parabola. In the parabola, one of the focal points of the ellipse is carried to infinity. On a parabolic pool table, if a ball placed in focus is hit with a cue, the ball hitting the parabola runs parallel to the axis of symmetry of the parabola.



This feature is used in the headlights of cars. Let's get a surface by rotating a parabola around the axis of symmetry. Let's cover this surface with a reflective material. A light bulb placed at the focal point will hit the parabolic surface and go straight ahead and illuminate our night. If the bulb is placed slightly above the focal point, the intensity of the light decreases and the driver of the oncoming vehicle is not disturbed.



For a parabolic reflector, $f = (D/2)^2/(4d)$

where, f = focal length

D = aperture diameter

and d = reflector depth.