Crossed Parabolic Cylinder Meridional Maximum Refraction

10 Questions

Questions

1. A parabola has a single defining external constant **BK** along its axis which equals:

a) CB/2
b) CB
c) 2CB
d) 4CB

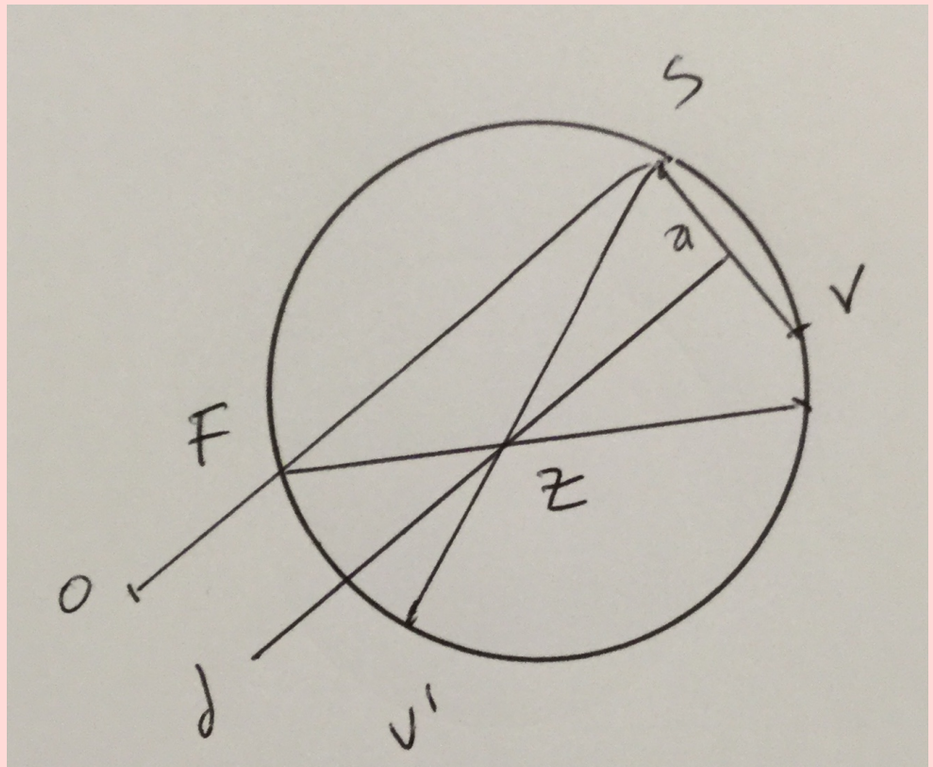
2. When ℝ = 1.5, the axial refractive effects of a parabola are additive as:

a) 1/BK
b) 1/BC
c) SB/SN
d) SB/2(SN)^2

3. When Δ**OSV** is constant, as variable diameter **SV'** approaches **SF**:

a) ∠FV'V decreases
b) ∠FV'V remains the same
c) ∠FV'V increases
d) ∠FV'V approaches π

4. Given Δ**OSV** and **ad**, the easiest way to find the circle with a variable diameter **SV'** and a chord **FZV'** is by using:



a) a ruler
b) a compass and a ruler
c) a template of circles with marked diameters
d) an App

5. A geometric solution for:

$$\text{Limit}_{\Delta\theta \Rightarrow 0} \frac{\Delta(\sin^2\theta)}{\Delta\theta} \sim LD$$

is found using:

a) properties of a cyclic quadrilateral
b) the quotient rule
c) the chain rule
d) the law of sines

6. The methods discussed in this course for finding the crossed parabolic cylinder meridional maximum refraction assumes:

a) all oblique cross sections of parabolic cylinders are parabolas
b) $\mathbb{R} = 1.5$
c) all oblique cross sections of parabolic cylinders are hyperbolas
d) a & b

7. When ∠**FSV** is constant, and the equation:

$\angle\mathbf{FSV} + (\theta + \alpha) = \pi$

can be geometrically solved for both θ and α, (with the use of an additional geometrical representation involving θ and α), which equation can represent another possible geometrical solution?

a) $\angle\mathbf{FSV} + 2(\theta + \alpha) = \pi$

b) $2\angle\mathbf{FSV} + 2(\theta + \alpha) = 2\pi$

c) $2\angle\mathbf{FSV} + 2(\theta + \alpha) = \pi$

d) $2\angle\mathbf{FSV} + 2\theta + \alpha = \pi$

8. In order to find a parabola's internal determining point in terms of its axial center of curvature:

a) Lines parallel to the axis must be perpendicular to the surface.
b) Lines perpendicular to surface points and crossing the parabola's axis need only maintain a geometrical relationship with the hypothetical internal determining point.
c) Lines perpendicular to surface points and crossing the parabola's axis need only maintain a geometrical relationship with lines parallel to the axis.
d) Lines perpendicular to surface points and crossing the parabola's axis must maintain a geometrical relationship with both the hypothetical internal determining point, and lines parallel to the axis.

9. The shape of a parabola changes according to its:

a) axial center of curvature
b) internal determining point
c) external determining point
d) The shape of a parabola does not change.

10. Given an index of refraction ℝ = 1.75, the refractive power of a parabola equals:

a) SB/SN²
b) 1.5 (SB/SN²)
c) 1.75 (SB/SN²)
d) 2 (SB/SN²)

Key

1. c
2. a
3. b
4. c
5. a
6. d
7. b
8. d
9. d
10. b