



Light Speed

186,000 mps
miles per second



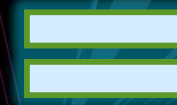
Light Speed

Speed of Light in Air

Speed of Light in New Substance

186,282 miles per second – Air

135,766 miles per second – Cornea

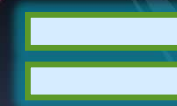


Index of Refraction

1.37

299,702,547 meters per second (mps) – Air

218,826,612 meters per second (mps) - Cornea



1.37



Index of Refraction

- Speed of Light in the cornea is
 - 135,766 mps

Index of Refraction

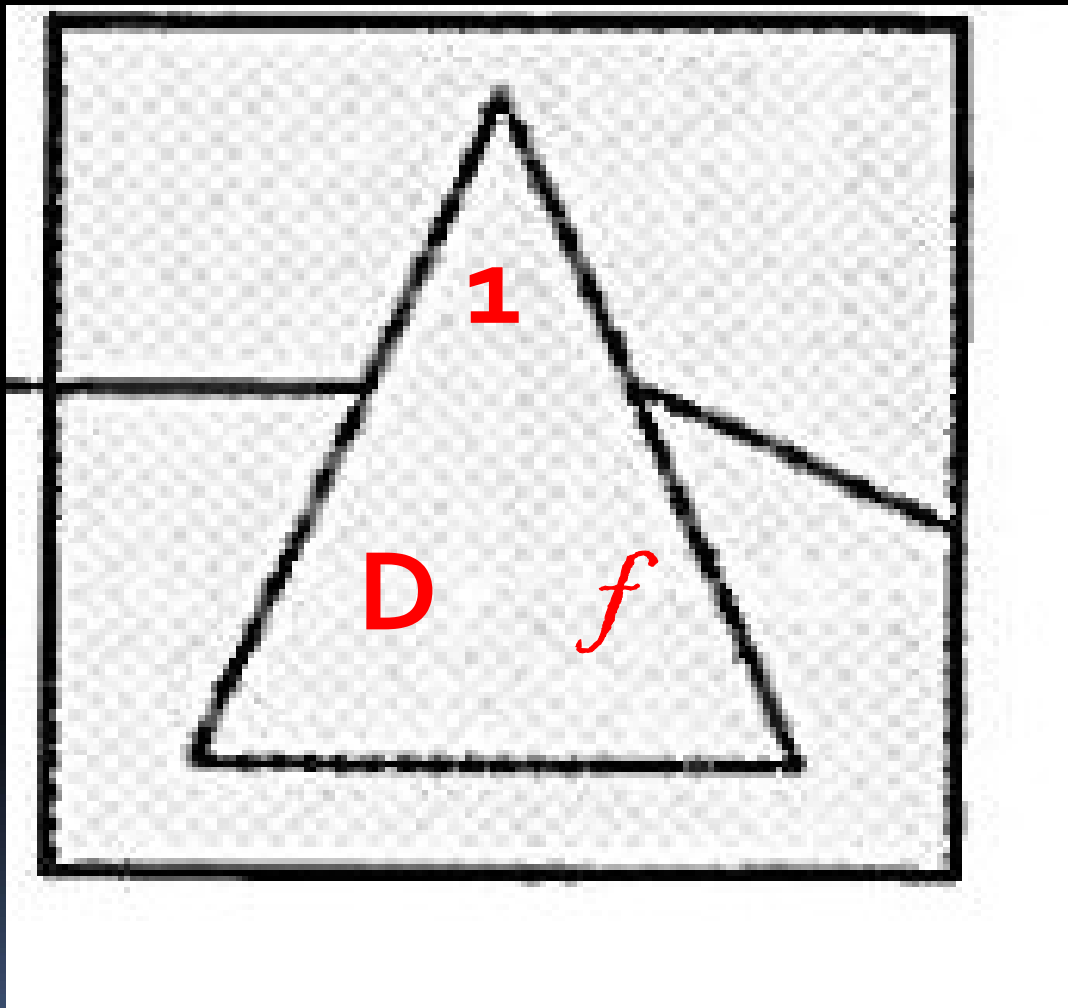
Material	Index
Air	1.000
Cornea	1.370
Crystalline Lens	1.420
Vitreous Humor	1.333
Ophthalmic Crown Glass	1.523
CR-39 Plastic	1.490
Polycarbonate	1.586
Barium Glass	1.602
Flint Glass 1.8	1.805
Titanium Glass	1.701

Index of Refraction

Material	n	c	(v) meters
Air	1.000	299792458	299,792,458
Cornea	1.370	299792458	218,826,612
Crystalline Lens	1.420	299792458	211,121,449
Vitreous Humor	1.333	299792458	224,900,569
CR-39 Plastic	1.490	299792458	201,202,992
Crown Glass	1.523	299792458	196,843,374
Trivex	1.532	299792458	195,686,983
Polycarbonate	1.586	299792458	189,024,248
Barium Glass	1.602	299792458	187,136,366
Titanium Glass	1.701	299792458	176,244,831
Flint Glass 1.8 .	1.805	299792458	166,090,004

Material	n	c	(v) miles
Air	1.000	186000	186,000
Cornea	1.370	186000	135,766
Crystalline Lens	1.420	186000	130,986
Vitreous Humor	1.333	186000	139,535
CR-39 Plastic	1.490	186000	124,832
Crown Glass	1.523	186000	122,127
Trivex	1.532	186000	121,410
Polycarbonate	1.586	186000	117,276
Barium Glass	1.602	186000	116,105
Titanium Glass	1.701	186000	109,347
Flint Glass 1.8 .	1.805	186000	103,047

Focal Length



1	1
Diopters	D
f	Focal length (meters)

Focal Length

Calculate Focal Lengths

$$D = +2.00$$

$$f = 1/D$$

$$f = 1/+2.00$$

$$f = +0.5 \text{ m or } +50 \text{ cm or } +500 \text{ mm}$$

$$D = -7.50$$

$$f = 1/D$$

$$f = 1/-7.50$$

$$f = -0.133\text{m or } -13.3 \text{ cm or } -133 \text{ mm}$$

$$D = -10.00$$

$$f = 1/D$$

$$f = 1/-10.00$$

$$f = -0.10 \text{ m or } 10 \text{ cm or } 100 \text{ mm}$$

Calculate Powers

$$f = +7.7 \text{ cm}$$

$$D = 1/f$$

$$D = 1/+0.077\text{m}$$

$$D = +13.00 \text{ D}$$

$$f = +0.222 \text{ m}$$

$$D = 1/f$$

$$D = 1/+0.222 \text{ m}$$

$$D = +4.50$$

$$f = -571 \text{ mm}$$

$$D = 1/f$$

$$D = 1/-0.571$$

$$D = -1.75$$

Virtual Focal Length

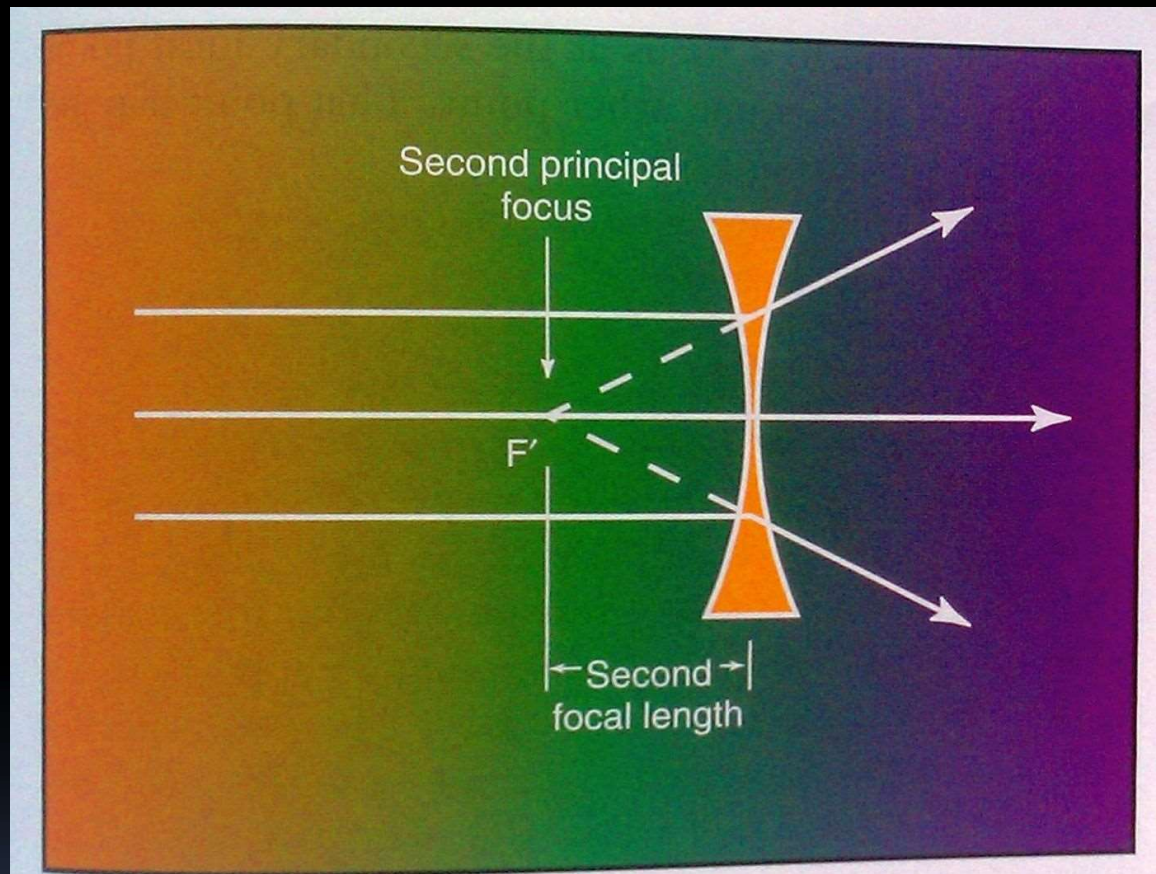
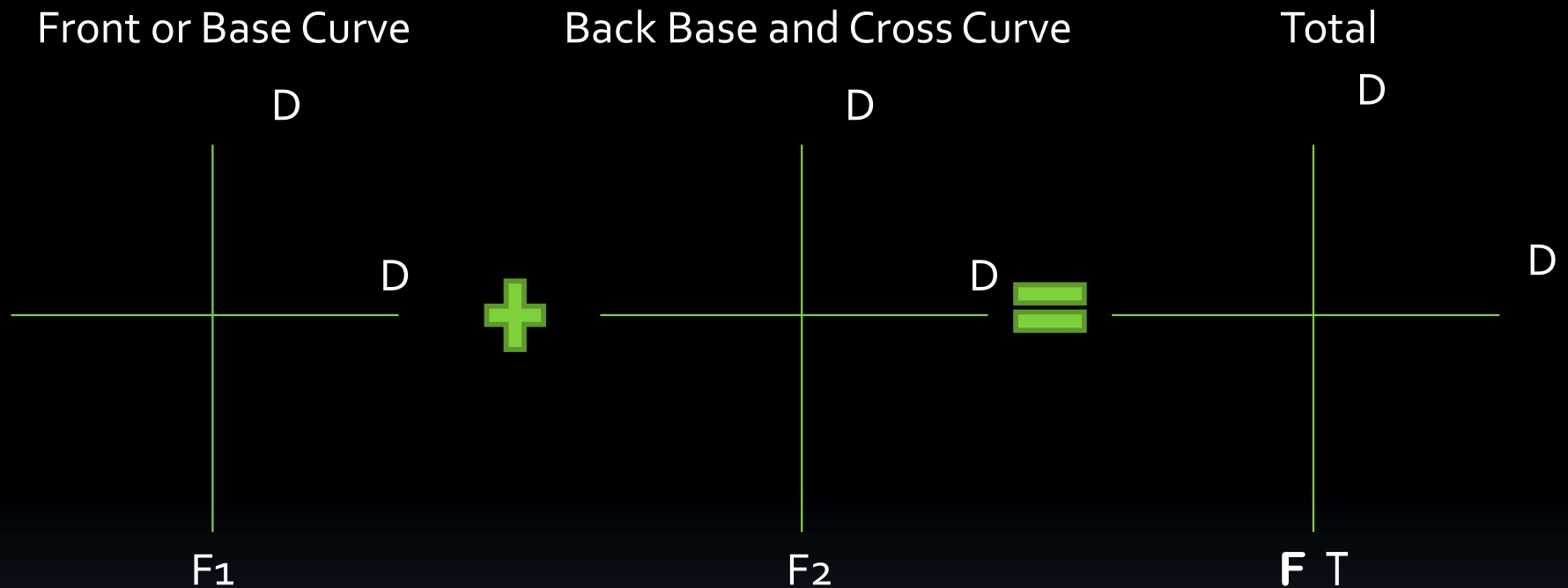


Figure 12-28. A minus lens causes parallel incoming light to diverge. The point from which light appears to diverge is called the second principal focus. The image formed by the backward projection of these diverging rays is a virtual image.

Power Cross





Power Cross – Practice Page

