Physics 102

Lecture 27

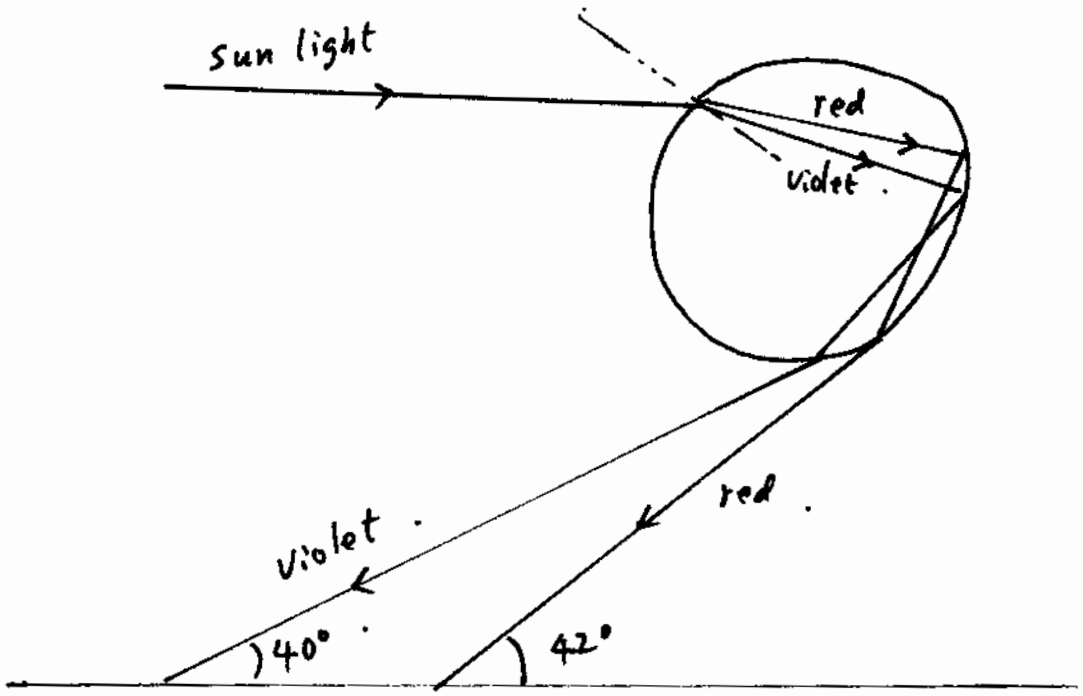
Friday. Nov. 12. 2004

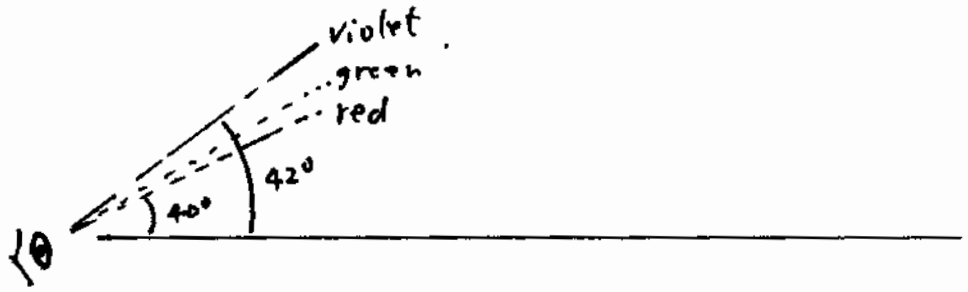
- Dispersion.

— n depends on f.

Demo: $n(f)$: The higher the f, the greater the n.

Rainbow:





- Demo. Prism.

- e.g. #76. p.885. (ch.26)

$d_o = 21$ cm.

$m = 1.5$.

Q:

(a). Real OR virtual image ?

[Sign of d_i ?]

$m = -\frac{d_i}{d_o}$, $\quad d_i = -m \cdot d_o = -1.5 \times 21 = -31.5$ cm.

Since $d_i < 0$, It's a virtual image

(b). $f = ?$

$\frac{1}{d_o} + \frac{1}{d_i} = \frac{1}{f}$. $\quad f = \frac{d_o \cdot d_i}{d_o + d_i} = \frac{(21) \times (-31.5)}{21 - 31.5} = 63$ cm.

(c). concave OR convex ?

$\because f > 0 \quad \therefore$ convex.

(d). Ray Tracing : 1:10