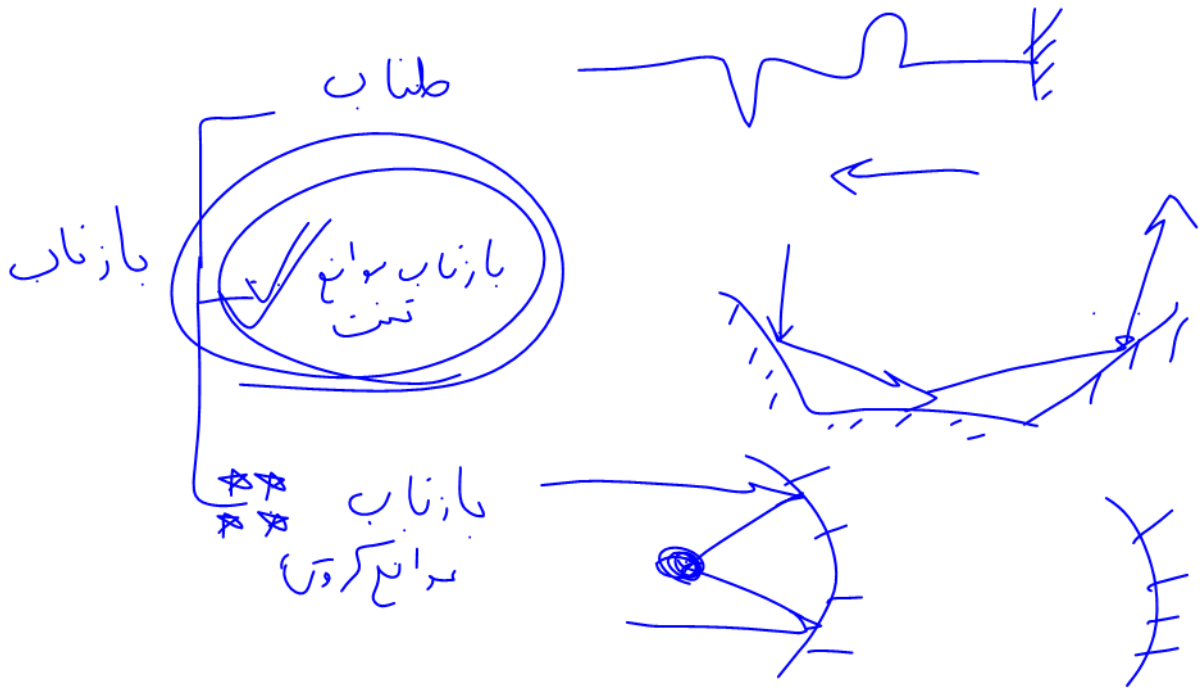
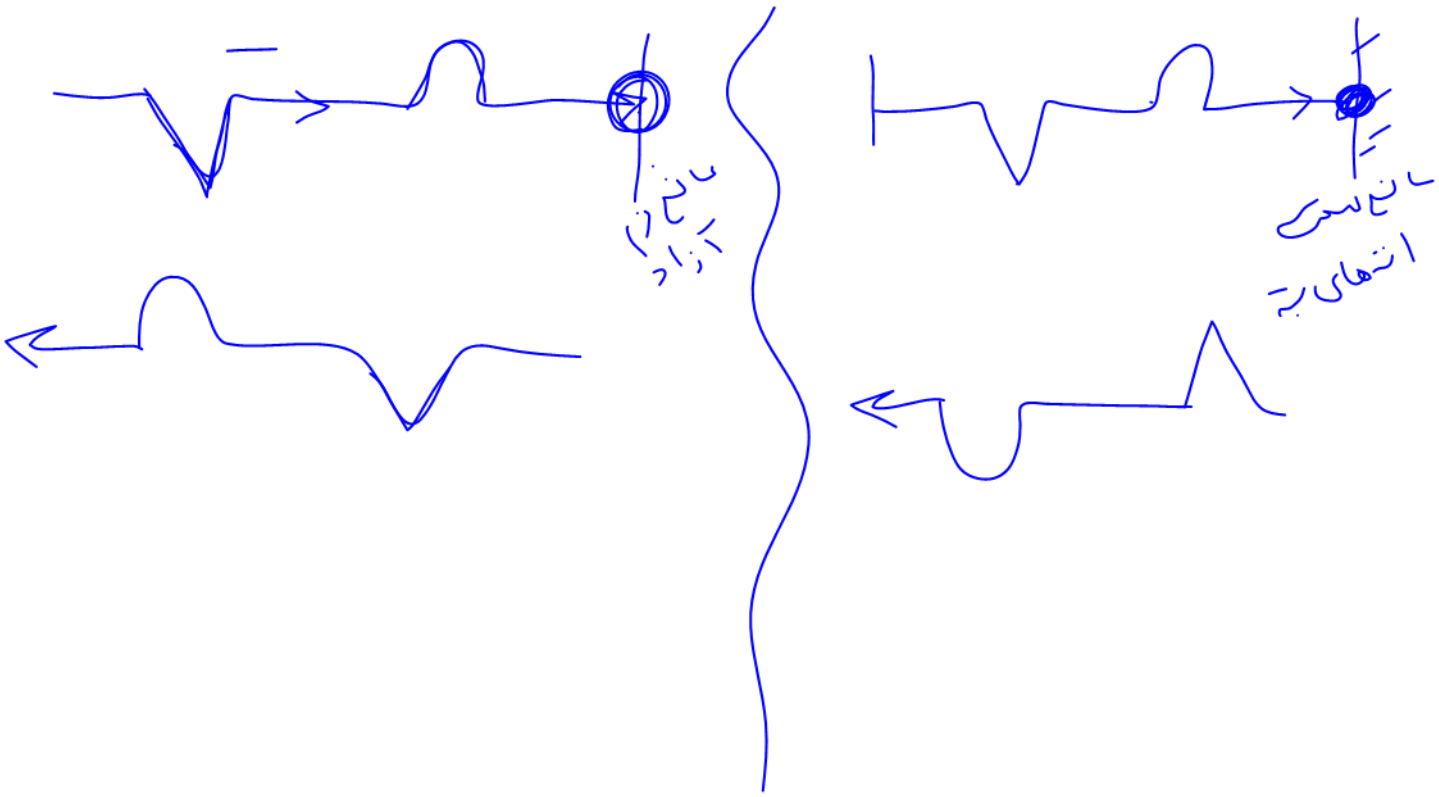
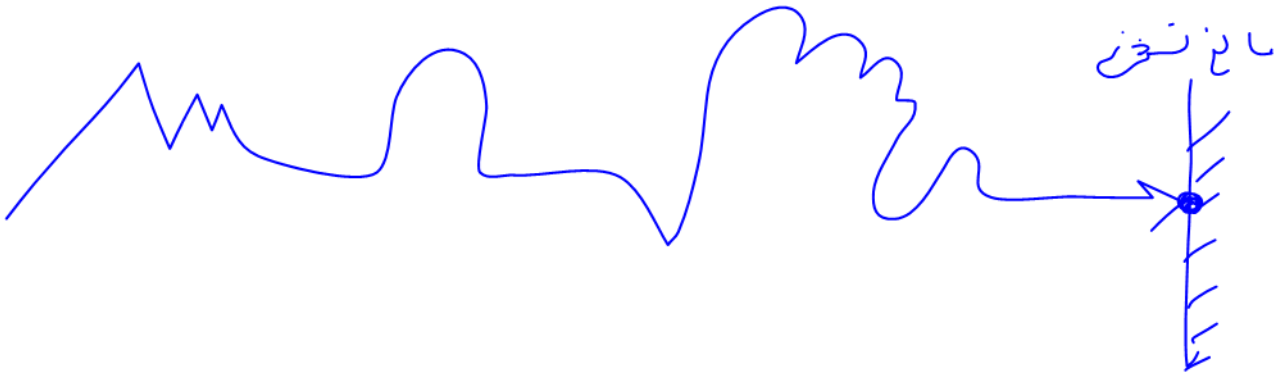
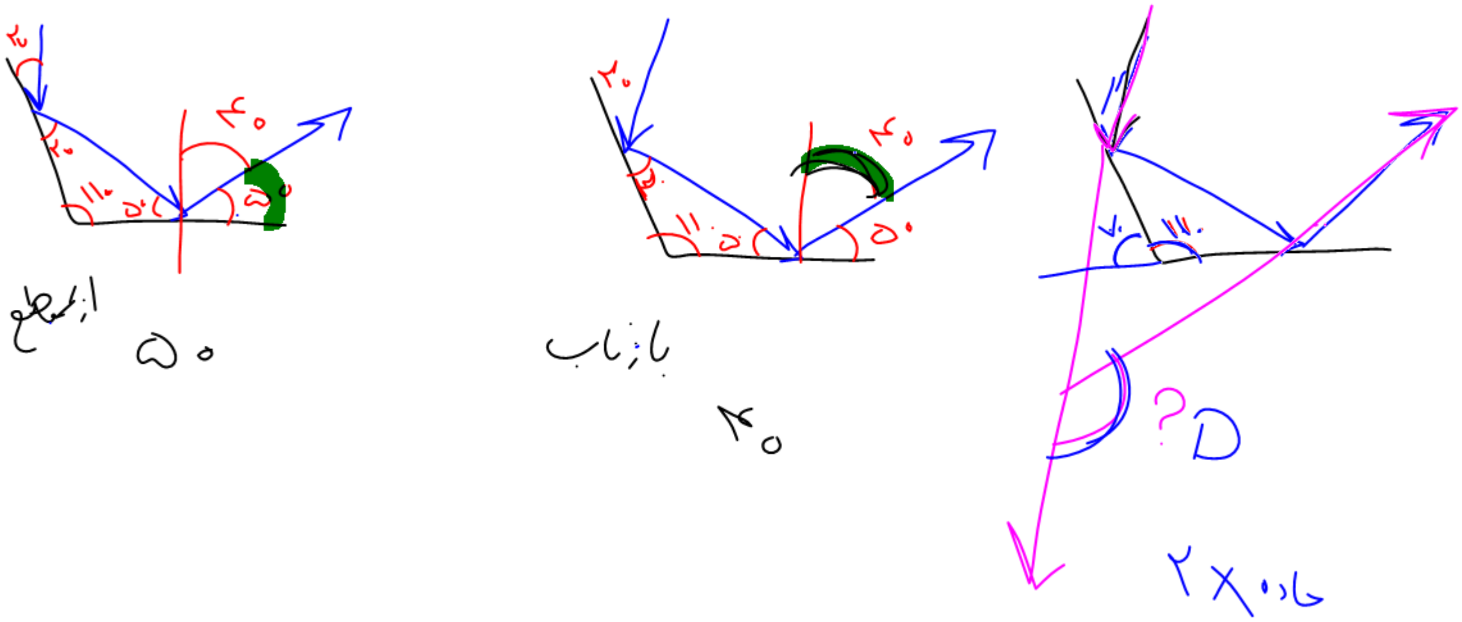

طناب
بازتاب
بازتاب موانع
تمت
بازتاب
موانع کروی




سایز نسخه

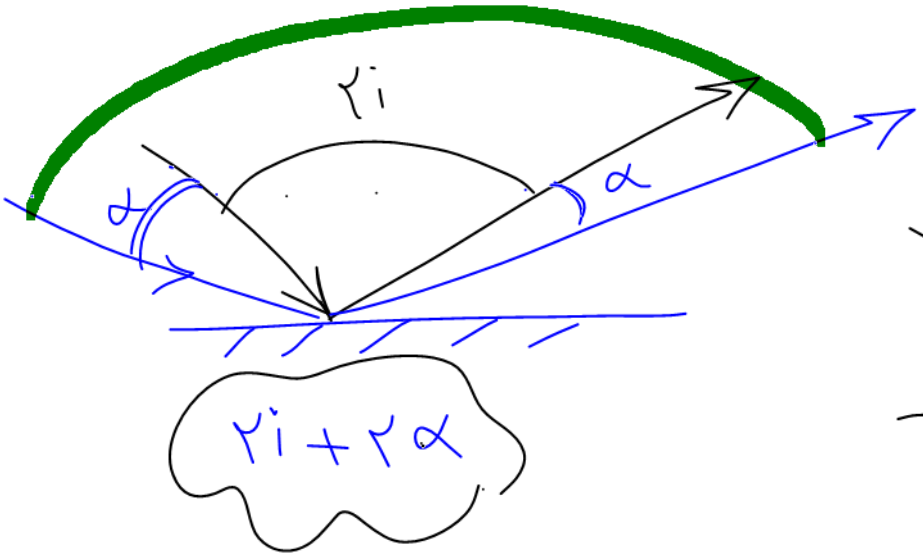


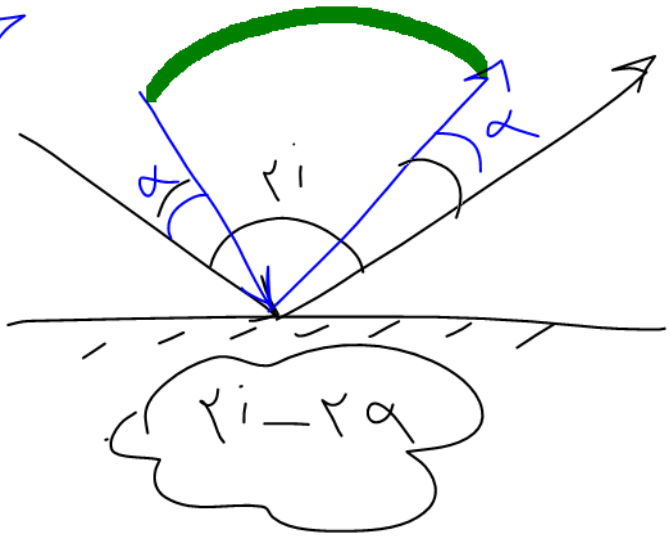
۵۰

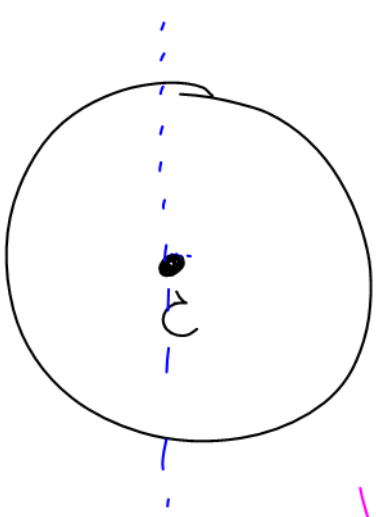
۴۰

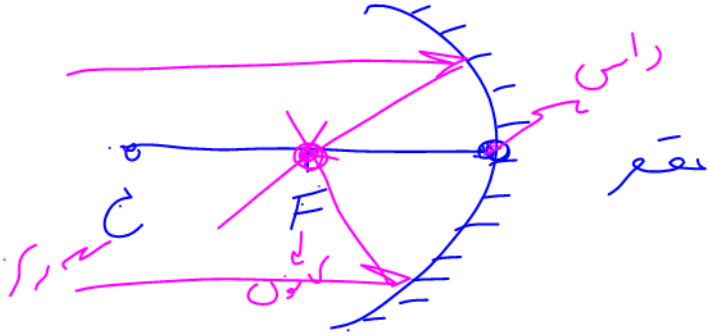
۲ × ۰۷

$۲(۷۰) = ۱۴۰$

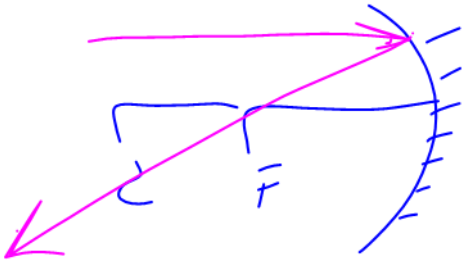

۲i
α
α
۲i + ۲α

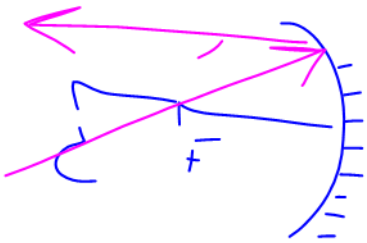

α
۲i
α
۲i − ۲α


ع

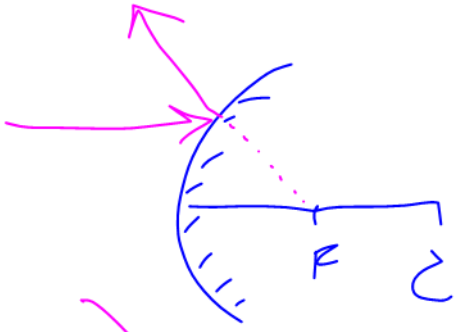

F

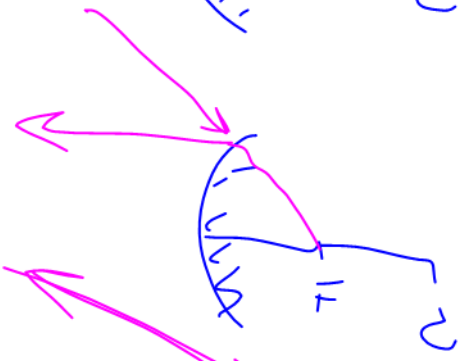

F


C
F

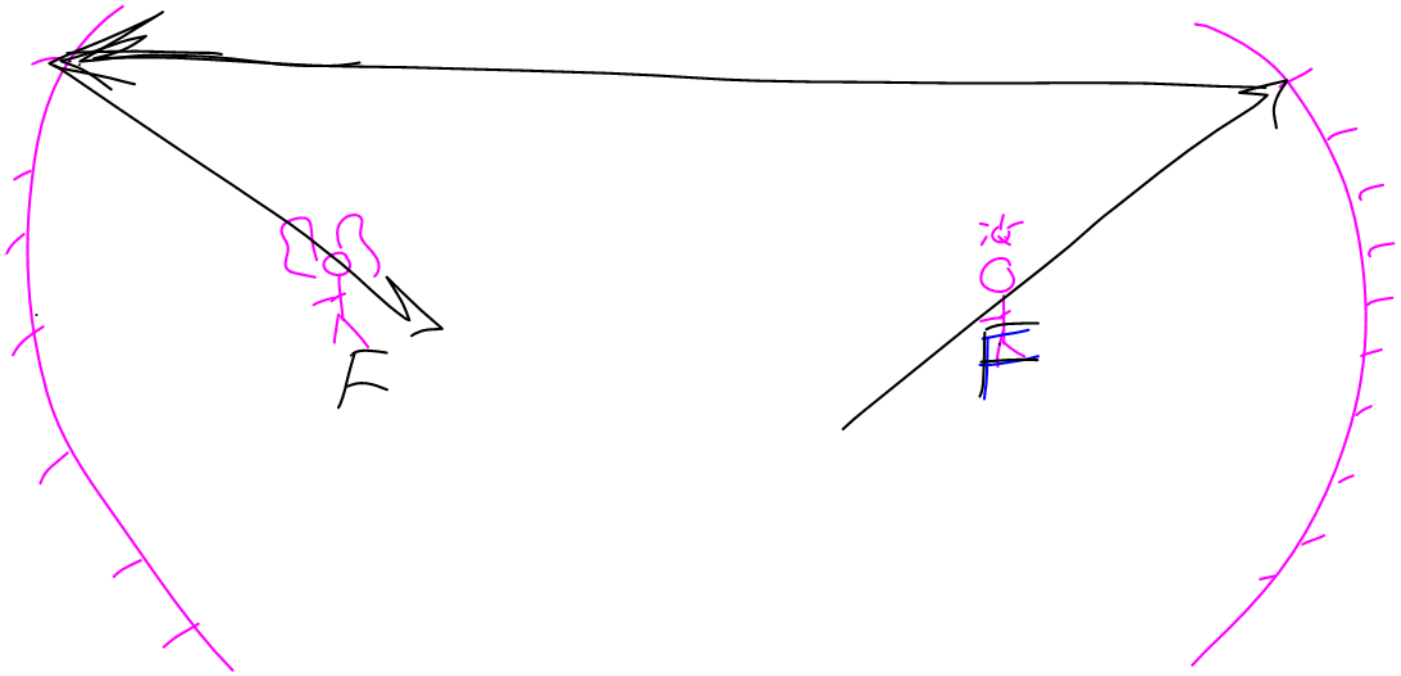

F

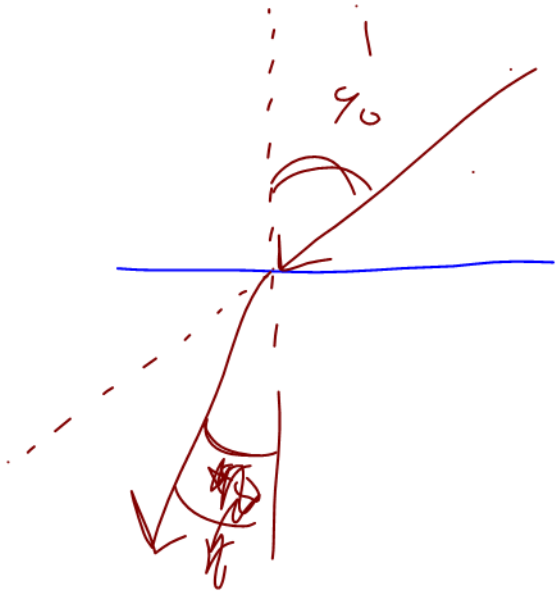

C
F


F
C


F
C


F
C


F
F



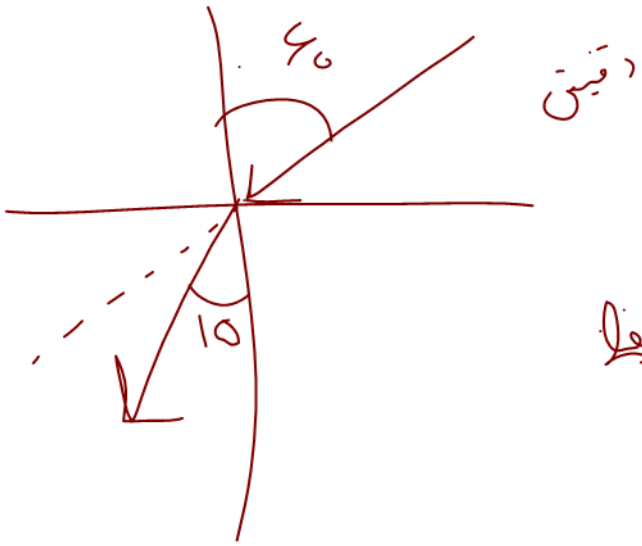
هوا

آب

$$n_1 \sin i = n_2 \sin r$$

$$n_1 v_1 = n_2 v_2$$

$$n_1 \lambda_1 = n_2 \lambda_2$$



دقيق

غليظ

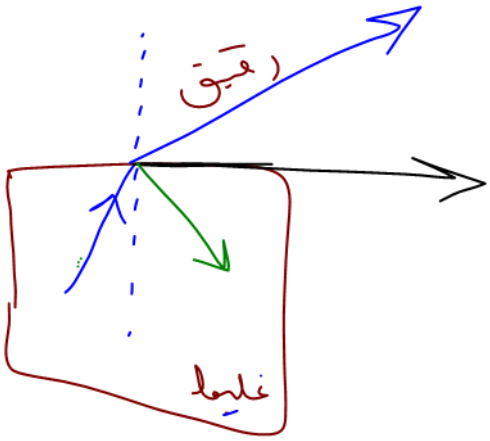
غليظ

دقيق

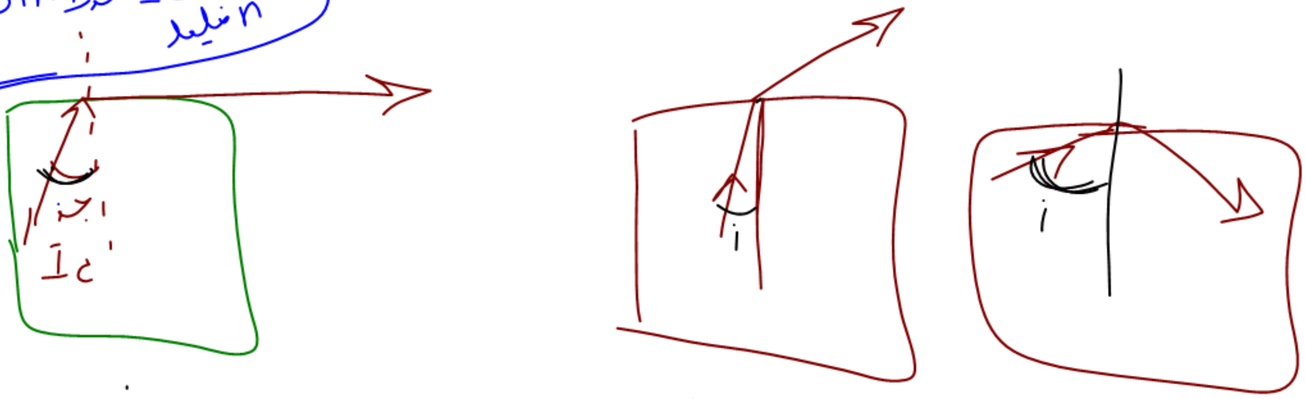
درصد = (برابر − ۱) × ۱۰۰

$$ط + \frac{۱٬۵۰۰}{۱٬۰۰۰} ط = ۲٫۵$$

برابر


زجاج
غليظ

(1) $\sin I_{حد} = \frac{n_{رقیق}}{n_{غلیظ}}$



$i = I_{حد}$

مماس

$i < I_{حد}$

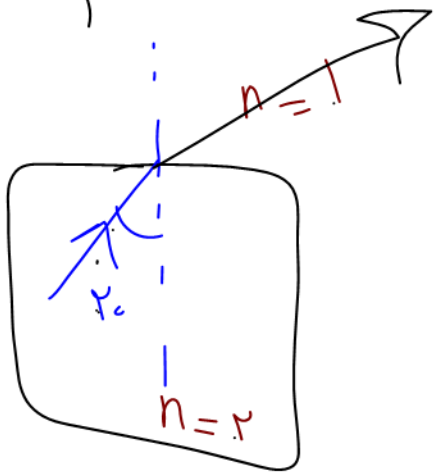
خارج

$i > I_{حد}$

بازتابی

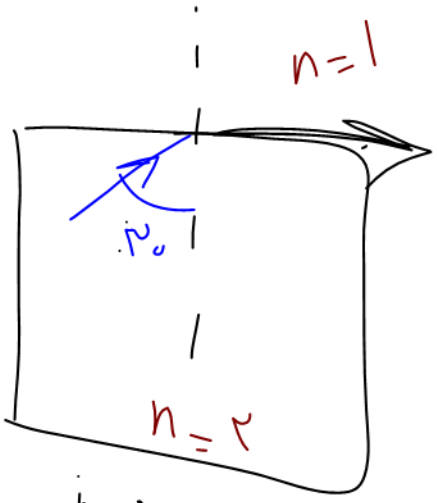
① $\sin I_{مرز} = \frac{1}{2}$

$I_{مرز} = ۳۰$



$۴۵ > ۳۰$

$i > i_{مرز}$

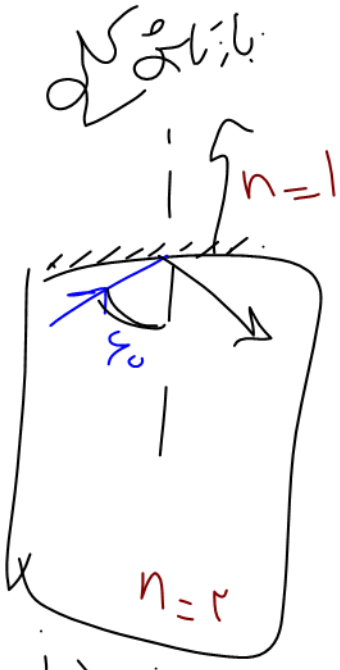


$i = ۳۰$

$i_{مرز} = ۴۵$

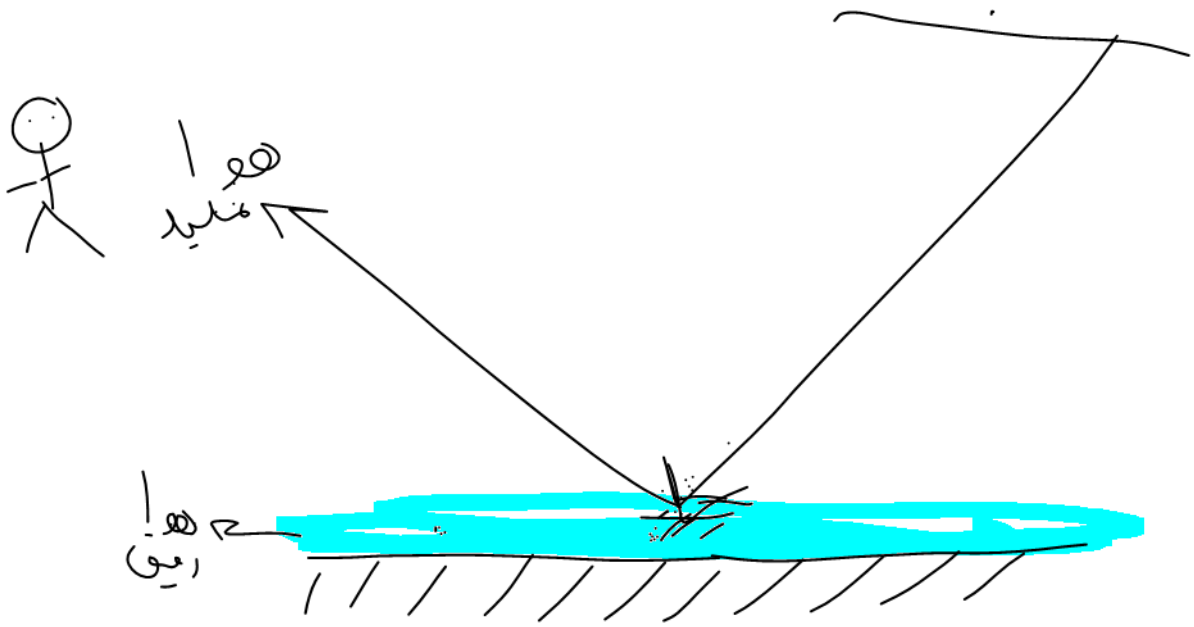
$i < i_{مرز}$

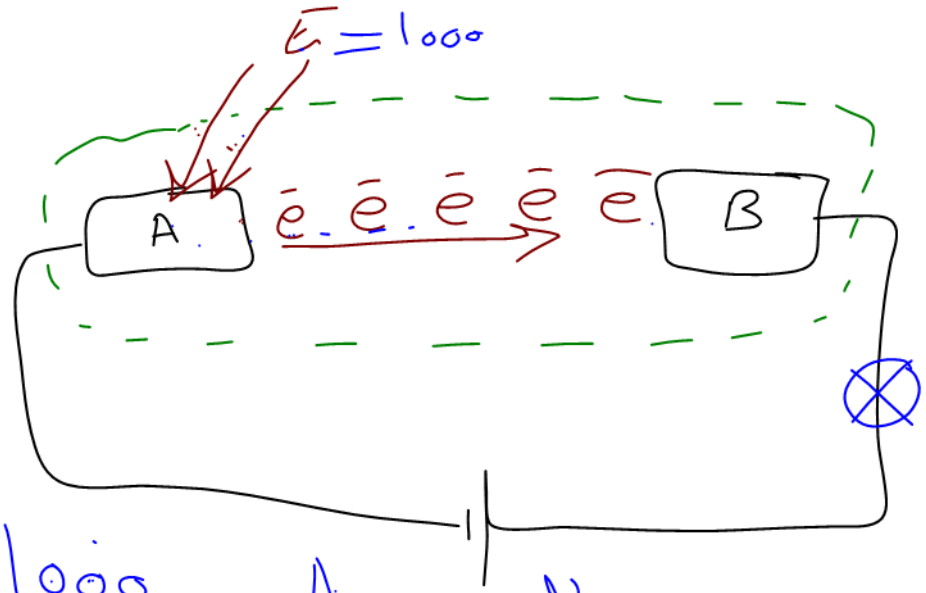
بازتابش کلی



$i > i_{مرز}$

$۶۰ > ۳۰$


هوا
متبدد
هوا!
زیق

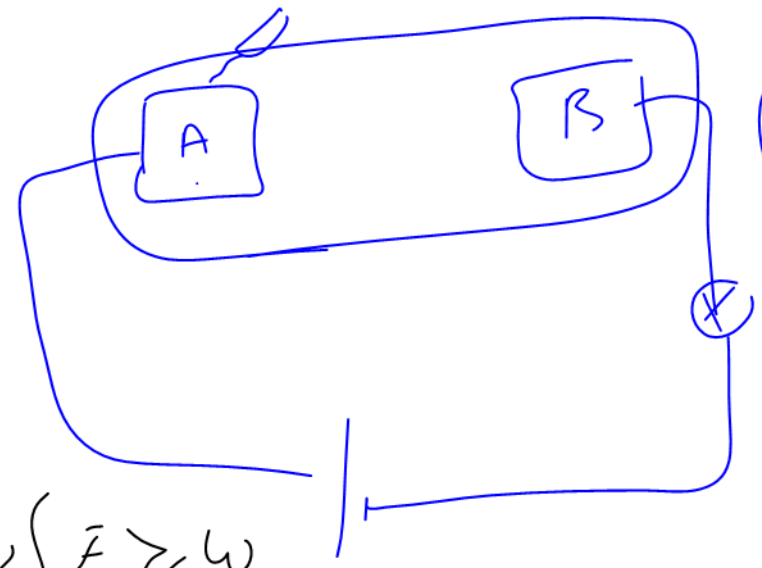


$E \geq \omega_0$

1000 eV = 800 eV + 200 eV

$E = \omega_0 + K_m$

(work function)

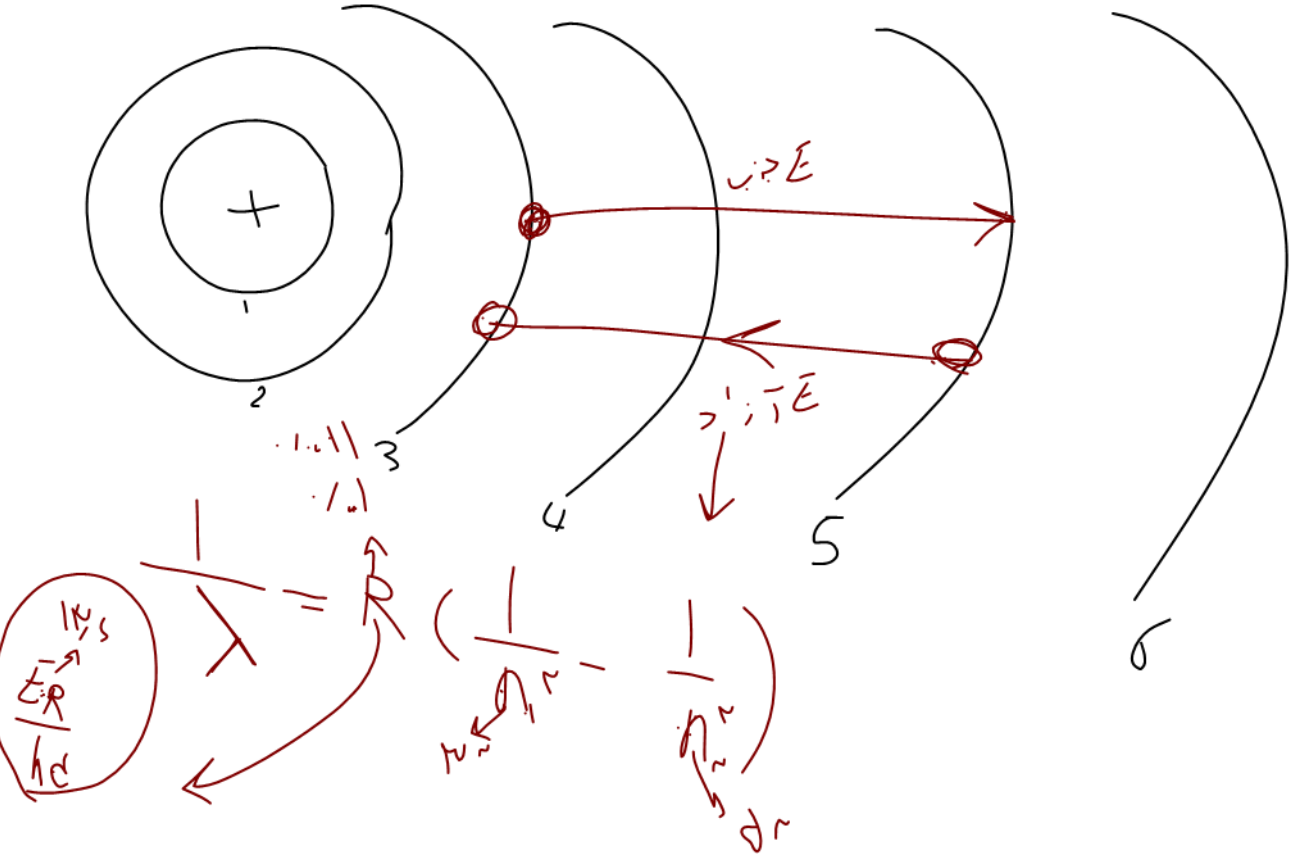


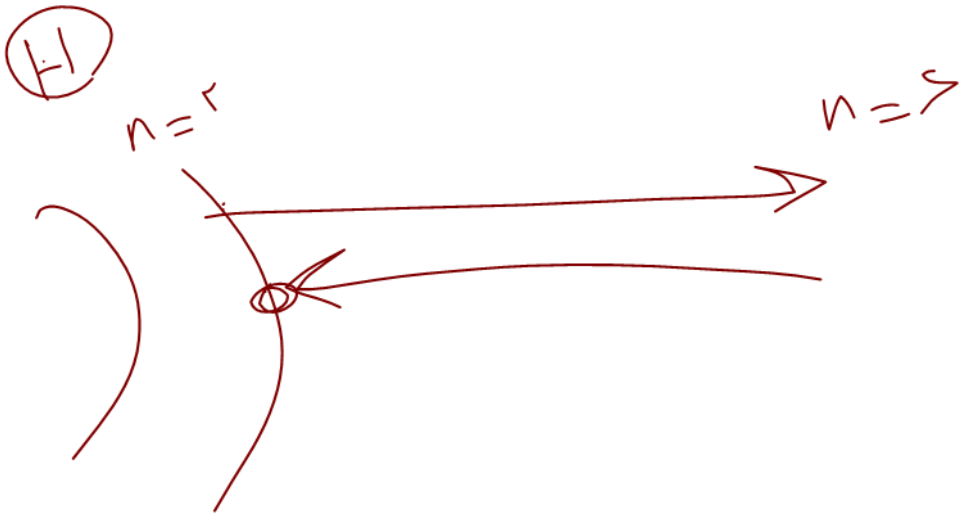
$$E = \omega_0 + K_m$$

$$hf = hf_0 + K_m$$

$$h\frac{c}{\lambda} = h\frac{c}{\lambda_0} + K_m$$

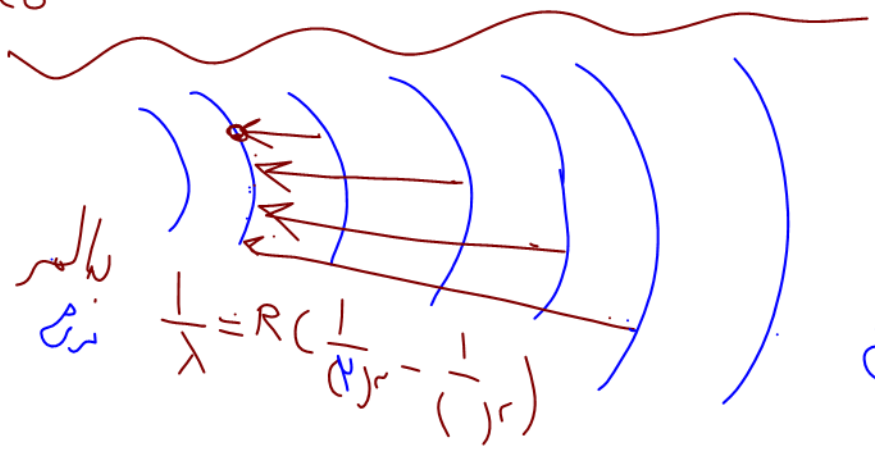
لو $\begin{cases} E \geq \omega_0 \\ f \geq f_0 \\ \lambda \leq \lambda_0 \end{cases}$


1
2
3
4
5
6


n=1
n=2

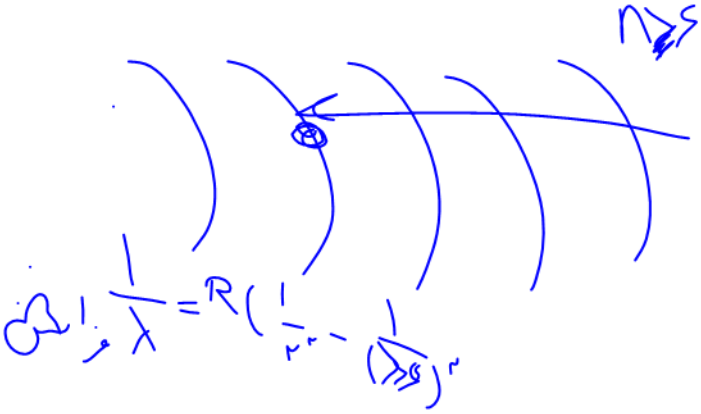
$$\frac{1}{\lambda} = R\left(\frac{1}{(1)^2} - \frac{1}{(\ )^2}\right)$$

بیان
(فرانتی)

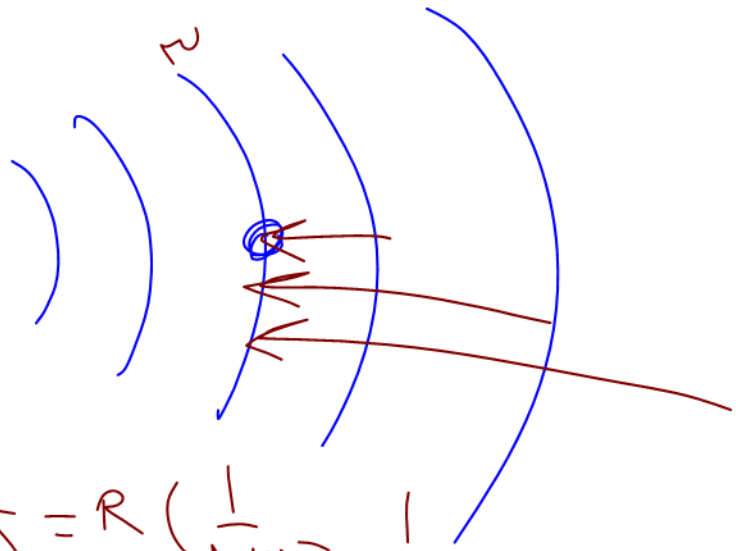


بالمر

$$\frac{1}{\lambda} = R\left(\frac{1}{(2)^2} - \frac{1}{(\ )^2}\right)$$



$$\frac{1}{\lambda} = R\left(\frac{1}{(\ )^2} - \frac{1}{(\ )^2}\right)$$



$$\frac{1}{\lambda} = R\left(\frac{1}{n_2^2} - \frac{1}{n_1^2}\right)$$

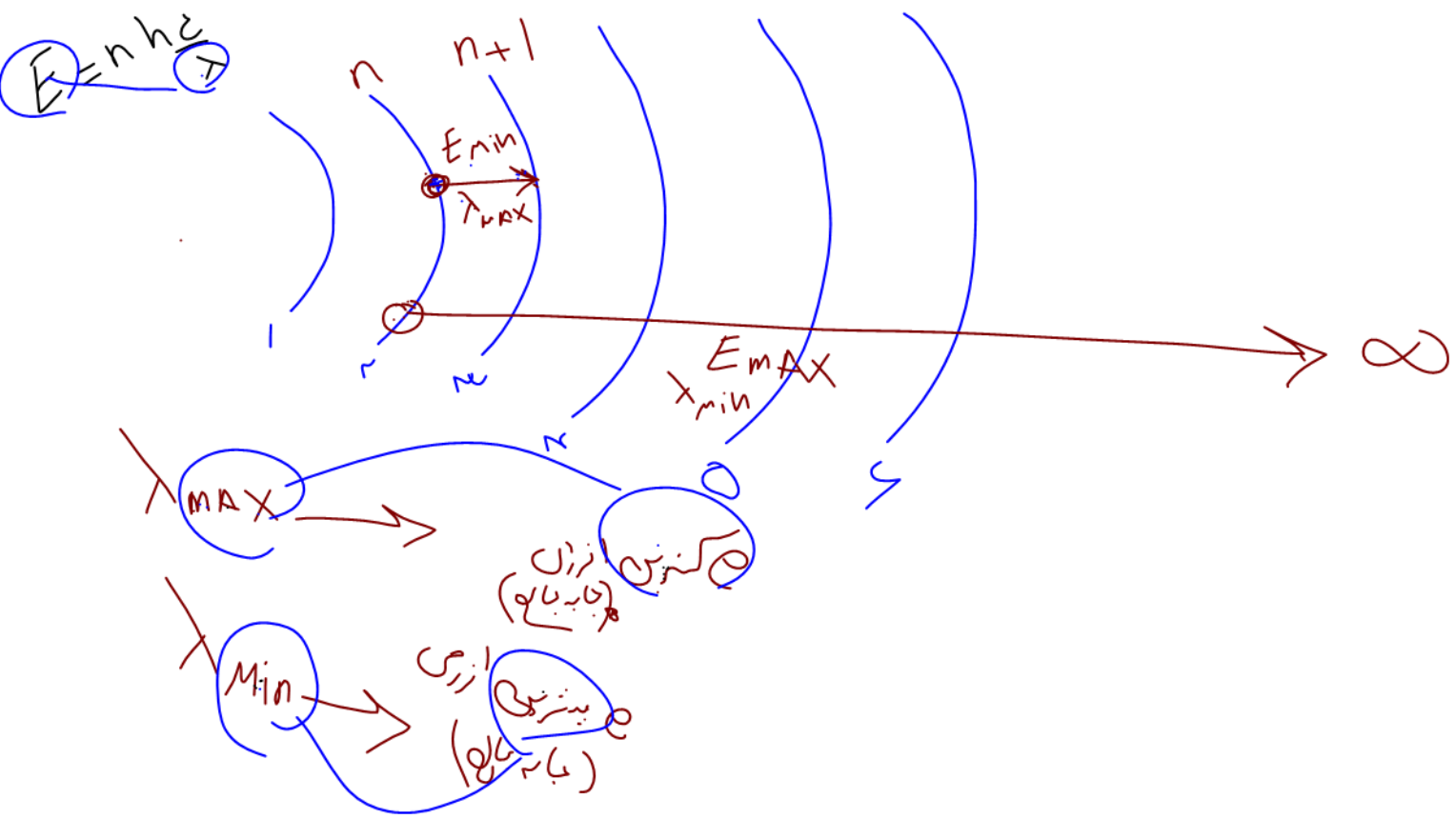
پاشن.
فروسرم

$$\frac{1}{\lambda} = R\left(\frac{1}{4^2} - \frac{1}{(\infty)^2}\right)$$

برای فضای خالی

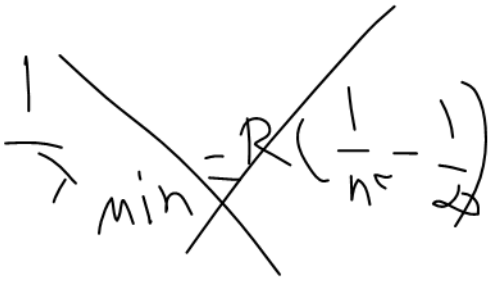
$$\frac{1}{\lambda} = R\left(\frac{1}{3^2} - \frac{1}{(\infty)^2}\right)$$

لیتیوم یون دوبار یونیده


E=nhc/λ
n
n+1
E min
λ MAX
E MAX
λ min
∞
MAX
کمترین انرژی
(با بیشترین طول موج)
Min
بیشترین انرژی
(با کمترین طول موج)

$$\frac{1}{\lambda_{MAX}} = R\left(\frac{1}{(3)^2} - \frac{1}{(3+1)^2}\right) \Rightarrow$$

$$\frac{1}{\lambda_{Min}} = R\left(\frac{1}{(3)^2} - \frac{1}{(\infty)^2}\right)$$



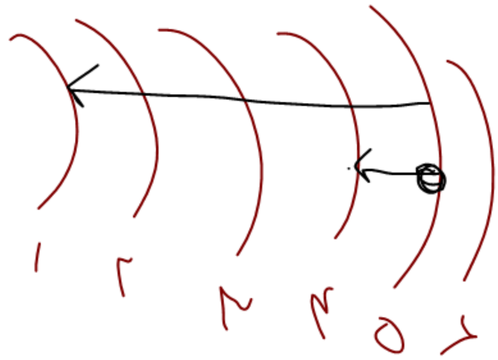
باشد λ_{MAX} و λ_{Min}

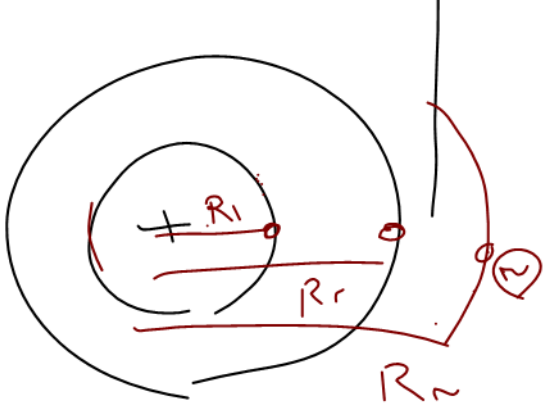
در اتم H

$$\frac{1}{\lambda_{max}} = R\left(\frac{1}{(4)^2} - \frac{1}{(5)^2}\right)$$

$$\frac{1}{\lambda_{min}} = R\left(\frac{1}{(1)^2} - \frac{1}{(5)^2}\right)$$

الکترون در تراز
برانگیخته ۵ است
λ_{min} و λ_{max}





$$E_n = -\frac{E_R}{n^2}$$

$$-\frac{E_R}{n^2}$$

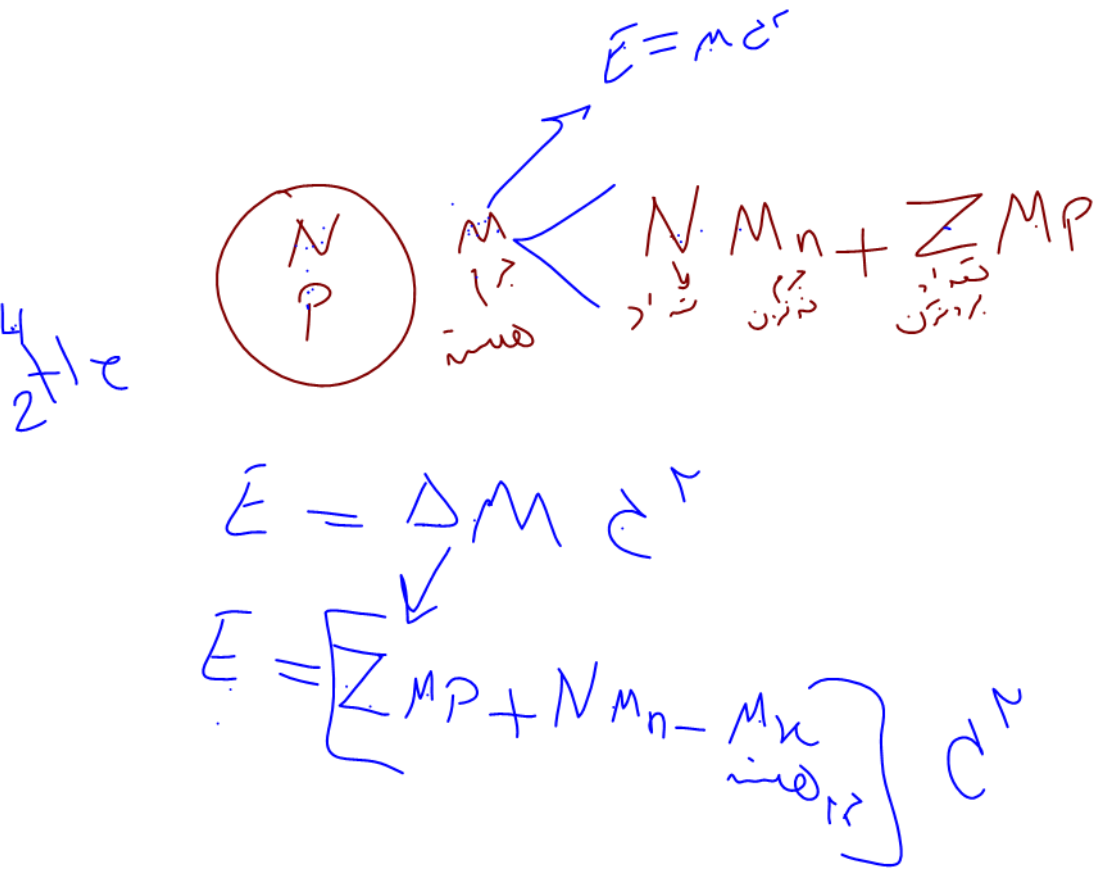
$$R_n = n^2 R_1$$

$$9R_1$$

$$E_n = -\frac{E_R}{n^2}$$

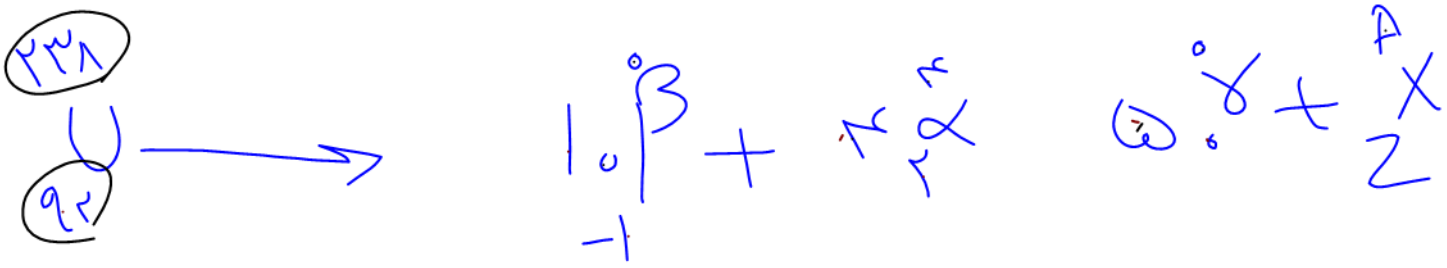
$$R_n = n^2 \times R_1$$

$$V_n = \frac{V_1}{n}$$



$$E = \Delta M \, c^2$$

$$E = \left[\sum M_P + N M_n - M_{\text{هسته}} \right] c^2$$

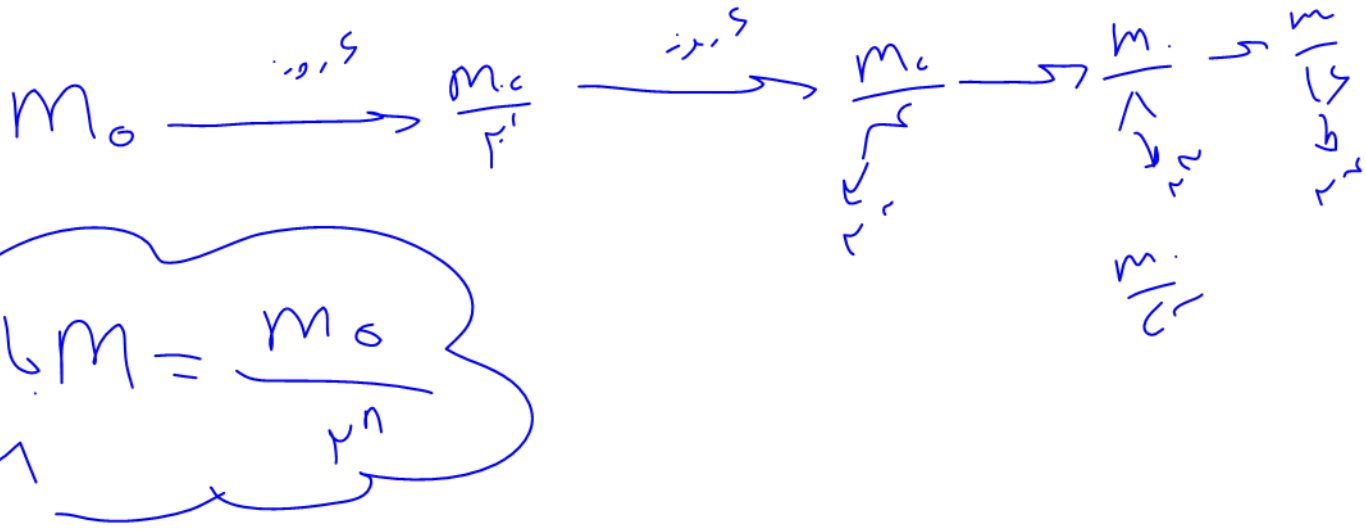


$۲۳۸ = ۱۰(۰) + ۴(۲) + ۵(۰) + A$

$A = ۲۳۸ - ۱۶ = ۲۲۲$

$۹۲ = ۱۰(-۱) + ۴(۲) + ۵(۰) + Z$

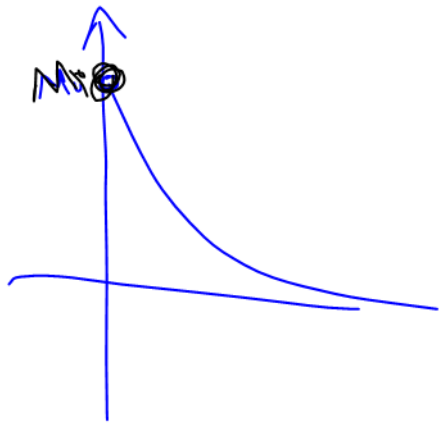
$Z = ۹۲ + ۲ = ۹۴$


m_0
$\frac{m_0}{2}$
$\frac{m_0}{4}$
$\frac{m_0}{8}$
$\frac{m_0}{16}$
$\frac{m_0}{2^n}$ یا $m = \frac{m_0}{2^n}$

$$m_{\text{جرم باقی}} = \frac{m_{0\,\text{جرم اولیه}}}{2^n}$$

$$n_{\text{تعداد نیمه عمر}} = \frac{t_{\text{زمان سپری}}}{T_{\text{نیمه عمر}}}$$

N باقی



N واپاشی