

$\begin{cases} 4a^2 + (m+2)a + \frac{m}{n} = 0 \\ 2a^2 + (m-2)a + a^2 = 0 \end{cases}$	$\begin{cases} a^2(2a+m-2) = 0 \rightarrow 2a+m-2=0 \\ \lim_{x \rightarrow \frac{1}{2}} \frac{\sqrt{4 x+\frac{1}{2} }}{x x+\frac{1}{2} } = \frac{\sqrt{4 x+\frac{1}{2} }}{x x+\frac{1}{2} } = \frac{2\sqrt{4}}{3} = \frac{4}{3} \end{cases}$ ۱
$\begin{aligned} 4a^2 + (d-2a)a + \frac{2-2a}{2} &= 0 \rightarrow (2a+1)^2 = 0 \rightarrow a = -\frac{1}{2}, m=2 \\ \frac{2 \tan b}{\sqrt{a}} \Rightarrow \tan b &= \frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2} \end{aligned}$	$\frac{2 \tan b}{\sqrt{a}} = \frac{2\sqrt{2}}{2} \rightarrow \tan b = \frac{\sqrt{2}}{2} \rightarrow b = \frac{\pi}{4}$ ۲
$\begin{aligned} x=1 &\rightarrow x^2+ax+b \rightarrow 1+a+b=0 \\ dx^2-ax+b &\rightarrow d-a+b=0 \\ \frac{1}{3} &\rightarrow \frac{-3-4}{3} = -\frac{7}{3} \end{aligned}$	$\begin{aligned} 1+a+b=0 \\ d-a+b=0 \\ 4+2b=0 \rightarrow b=-2, a=2 \end{aligned}$ ۳
$\begin{aligned} x=1 &\rightarrow \tan \frac{\pi}{4} = \frac{ x^2+x-2 }{a(1-x)} = \frac{ 2x+1 }{-a} = -1 \rightarrow a=3 \\ x=d &\rightarrow -\frac{2d}{12} = b(x-[x]) \rightarrow -\frac{2d}{12} = b(d-(-6)) \\ -\frac{1}{3} &= 11b \rightarrow b = -\frac{1}{33} \rightarrow ab = 2 \times -\frac{1}{33} = -\frac{2}{33} \end{aligned}$	$\begin{aligned} a=3 \\ b = -\frac{1}{33} \end{aligned}$ ۴
$\begin{aligned} a[x+1] + b[x[a+1]] &= (a+b)[x] + a+b+b[a] \\ a+b &= 0 \leftarrow \text{فرض کنیم } [x] \text{ با } [a+1] \text{ برابر باشد} \\ f(x) &= -a[a] \rightarrow \frac{a[a]}{-a[a]} = -1 \end{aligned}$	$\begin{aligned} f(x) &= -2a \rightarrow \frac{a}{-2a} = -\frac{1}{2} \end{aligned}$ ۵

$$f(a) = b(a - [-a]) = b(a+a) = 1 \cdot b$$

$$\lim_{x \rightarrow \infty} f(x) = \lim_{x \rightarrow \infty} \frac{|x^2+x-2|}{x(1-x)} = \lim_{x \rightarrow \infty} \frac{|x^2+x-2|}{x(1-x)} = \frac{-2d}{12} = -\frac{1}{6}$$

$$\begin{aligned} 1 \cdot b &= -\frac{1}{6} \\ b &= -\frac{1}{6} \end{aligned}$$

$$ab = -\frac{1}{6}$$

$$\frac{\lambda^r + m\lambda + n}{a - \lambda} \xrightarrow{\lambda=a} \frac{0}{0} \rightarrow \frac{\lambda a + m}{-1} = r \rightarrow \lambda a + m = -r$$

$$\lambda = \lambda a \rightarrow \frac{\lambda a^r + \lambda a m + n}{-a} = 0 \quad \lambda a^r + \lambda a m + n = 0$$

$$a = r \rightarrow \lambda a + m = -r \quad m = -r$$

$$h - m = 1 \quad h = 1$$

$$\lambda a^r + a m = 0 \rightarrow a^r \cdot \lambda a = 0$$

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از 0 که $a=r$

$$\lambda = 0^+ \rightarrow 1 - \lambda a^r = b \sin\left(\frac{\pi}{a}\right)$$

$$\lambda = 0^- \rightarrow a - 1 = b \sin\left(\frac{\pi}{a}\right)$$

$$1 - \lambda a^r = a - 1 \rightarrow a = \frac{r}{r}$$

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$$\frac{r}{r} - 1 = b \sin \frac{\pi}{r} \rightarrow -\frac{1}{r} = b \sin \frac{\pi}{r} \rightarrow b = \frac{1}{r} \rightarrow \frac{a}{b} = \frac{r}{\frac{1}{r}} = r^2$$

$$\frac{|\lambda^r + m\lambda - m - 1|}{m|\lambda^r - 1| + |\lambda - 1|} \xrightarrow{\lambda=1} \frac{0}{0} \rightarrow \frac{|\lambda^r + m|}{r m \lambda + 1} \xrightarrow{\lambda=1} \frac{|\lambda^r + m|}{r m + 1}$$

$$\frac{|\lambda^r + m|}{r m + 1} = \frac{m}{m + r} \rightarrow (m + r)^r = r m^r + m \rightarrow m = r$$

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$$\frac{|\lambda^r + r\lambda - r - 1|}{r|\lambda^r - 1| + |\lambda - 1|} \xrightarrow{\lambda=\frac{1}{r}} \frac{\frac{r}{r}}{\frac{r}{r}} = \frac{r}{r}$$

$$\frac{\sqrt{r}|\lambda^r + a|}{|\lambda^r + (m - r)\lambda + a^r|} \rightarrow \lambda^r + (m - r)\lambda + a^r \xrightarrow{\lambda=a} a^r + a m - \lambda a + a^r = 0$$

$$\frac{\sqrt{r}|- \lambda - 1|}{\lambda^r - (0) + 1} \xrightarrow{\lambda=a} \frac{\sqrt{r}}{r}$$

$$a(a^r + m - r + a) = 0 \rightarrow a^r + m - r + a = 0 \rightarrow m - r = -(a^r + a)$$

$$\frac{\sqrt{r}|\lambda^r + a|}{|\lambda^r + (a^r + a)\lambda + a^r|} \rightarrow \lambda^r + a \rightarrow \sqrt{r}|\lambda^r + a| = 0 \rightarrow a = \frac{1}{r}(-1)$$

$$\frac{\lambda^r + |\lambda|}{\lambda^r + a|\lambda|} \xrightarrow{\lambda=0} \frac{0}{0} \xrightarrow{\text{Hop}} \frac{\lambda^r + 1}{\lambda^r + a} = \frac{1}{a} = \frac{\lambda a - 1}{\lambda a + r}$$

$$\lambda a^r - a = \lambda a + r \rightarrow \lambda a^r - \lambda a - r = 0 \rightarrow a = r$$

$$a = -\frac{1}{r} \rightarrow \text{معادلات نامیده در 3 د}$$

$$\frac{\lambda^r + |\lambda|}{\lambda^r + r|\lambda|} \xrightarrow{\lambda=\frac{1}{r}} \frac{\frac{1}{r} + \frac{1}{r}}{\frac{1}{r} + 1} = \frac{\frac{r}{r}}{\frac{r}{r}} = \frac{r}{r}$$