

(1) $\begin{cases} a + b = 0 \\ a + b + 1 = 0 \end{cases} \rightarrow \begin{cases} n \neq 0 \rightarrow a = -b \\ n = 0 \rightarrow a = -b \end{cases}$

(2) $n = f + b = \frac{f + a}{f - b}$
 $b = -1$
 $\frac{f + a}{f - 1} = n \rightarrow a = 1$
 $\leftarrow x + b = \frac{n^2 + 1}{n - b} = f \rightarrow g(x) = f(x)$
 $\rightarrow \frac{n^2 + 1}{n + 1} \rightarrow f(x) = \frac{1 + 1}{x + 1} = \frac{2}{x + 1}$

(3) $(n + 1)(n - 1) = 0 \leftarrow a n^2 + b n + c = 0$

$\begin{matrix} a = -1 \\ b = -1 \end{matrix} \rightarrow \begin{cases} n^2 - 2n - 1 = 0 \\ n^2 - 2n - 1 = 0 \end{cases} \leftarrow n^2 - 2n - 1 = 0$
 $f(x) = \frac{-1 + 1}{x - 2 - 1} = \frac{0}{x - 3}$

$a + b = -1 - 1 = -2 \rightarrow a = -1, b = -1 \rightarrow n^2 - 2n - 1 = 0 \leftarrow n^2 - 2n - 1 = 0$
 $\leftarrow -f n^2 + a n + b = 0$

(5) $n^2 + m n + 1 = 0$
 $\begin{matrix} m < 0 \\ m^2 < f \\ m^2 < f \end{matrix} \rightarrow \begin{matrix} -1 < m < 1 \\ -1 < m < 1 \end{matrix}$

$n \geq \frac{1}{2} \rightarrow n \geq \frac{1}{2} \rightarrow f n^2 \geq 1 \leftarrow \frac{1}{n} \leq \frac{f}{1} \leftarrow \frac{1}{n} \geq f \leftarrow f - \frac{1}{n} > 0$

(7) $m n^2 + m n + 1 > 0$
 $\begin{matrix} b - fa < 0 \\ f m^2 - b m < 0 \\ f(m^2 - m) < 0 \\ m(m - 1) < 0 \end{matrix} \leftarrow \begin{matrix} a < 0 \\ a > 0 \\ m > 0 \\ m < 0 \end{matrix}$

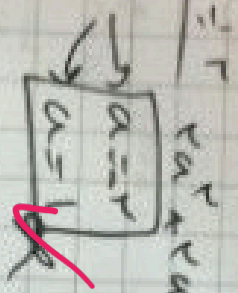
$\begin{matrix} m = 0 \\ m = 1 \end{matrix} \rightarrow a < m < 1$
 $k = 0 \rightarrow r = 4k \rightarrow g(x) = f(x)$
 $a + k = \frac{1}{2} + 0 = \frac{1}{2}$
 $a = \frac{1}{2}$

$n = \frac{1}{2} \rightarrow n = 0$
 $b + r a = f \rightarrow -r + b = -2 + r = f$
 $g(x) = f(x)$
 $n = -\frac{r}{f}$
 $\frac{f(0) - f}{f(0) + f} = +b \rightarrow b = -r \rightarrow -r + r a = f \rightarrow a = 1$
 $(a, b) = (1, -2)$

Subject:

$$a^2 + a - v = 0$$

$$(a-1)(a+1) = 0$$



$$M^T R = R A + P A$$

$$g(n) = f(n)$$

$$n = v$$

Date:

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۵- حاصلت برای عبارت $x^2 + mx + 1$ وجود خواهد داشت:

حالت ۱) ریشه صحیح نداشته باشد: $-2 < m < 2$ ¹

حالت ۲) ریشه صحیح داشته باشد $x = 1$ $m = -2$ ²

$1 \cup 2 \rightarrow \boxed{-2 \leq m < 2}$
