

$$n=1 \Rightarrow y = \pm 1$$

الف) تابع نیست

$$(y+1)^2 - 1 + n^2 + n = 0$$

5

ب) تابع است

4

$$(y+1)^2 = -n - n^2 + 1$$

$$y+1 = \sqrt{-n - n^2 + 1}$$

$$y = \sqrt{-n - n^2 + 1} - 1 \Rightarrow$$
 دارای حرکت یک نوسانم

$$\frac{(m^2 + fm + f + 1)}{n^2 + fn + f + 1} = \frac{(m+r)^2 + 1}{(n+r)^2 + 1}$$

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5

$$f(\sqrt{r}-r) = \frac{(\sqrt{r}-r+r)^2 + 1}{(\sqrt{r}-r+r)^2 + 1} = \frac{f}{f} = \frac{r}{r}$$

$$\begin{bmatrix} a \\ -1 \\ -f \end{bmatrix}$$

$$-1 - a + b = -f$$

$$-r - a = -f \Rightarrow a = 1 \Rightarrow b = -2$$

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2

$$f(m) = n^2 + n - r \Rightarrow n^2 + n - r = r - n - 1 \rightarrow n^2 - 2n - 1 = 0 \Rightarrow$$

$$y = r - n - 1 \quad (n+1)(n^2 - n - 1) = 0$$

$$\hookrightarrow \text{جیب ریشه ها} = \frac{-b}{a} = 1$$

$$a + b = ra \Rightarrow b = a$$

$$ra = a - rb + 1 \rightarrow a = -rb + 1 \Rightarrow a = -ra + 1$$

5

9

$$ra = 1 \Rightarrow a = \frac{1}{r}$$

$$f(0) = \frac{c+1}{r} = 0 \Rightarrow c = -1 \rightarrow f(n) = \frac{fn^2 - an}{bn+r}$$

5

$$f(1) = \frac{f-a}{b+r} = 1 \quad f-a = b+r$$

$$f(-1) = \frac{f+a}{-b+r} = -1 \quad f+a = b-r$$

$$\Rightarrow \begin{cases} b = f \\ a = -r \end{cases}$$

$$a + b + c = -1 + f - r = 0$$

10