

نام و نام خانوادگی: (صاحبی) پاسخنامه تشریحی تکلیف شماره ۳ ... کلاس: ...

$$f(n) - n + 1 = \begin{cases} n & ; [n] > \frac{1}{2} \Rightarrow n > \frac{1}{2} \rightarrow n + \infty \\ 2n + \frac{1}{2} & ; [n] < \frac{1}{2} \Rightarrow n < \frac{1}{2} \rightarrow 2n + \frac{1}{2} = 0 \\ & \hookrightarrow n = -\frac{1}{4} \end{cases}$$

$D_f = [-\frac{1}{4}, +\infty)$

$$\frac{r(12^r + 12n^2 + 4n + 1)}{(2n+1)^4} = \frac{r(2n+1)^r}{(2n+1)^4} = \frac{r}{2n+1}$$

$D_f = \mathbb{R} - \{-\frac{1}{2}\}$

$$f(n) = \begin{cases} (n-1)(n^2 + \frac{1}{2}n + \frac{1}{2})(n+1)(n+2) \\ \frac{an+r}{2+b} \xrightarrow{n=\pm 1} \frac{a(1)+r}{2+b} = \frac{a+r}{2+b} = n+2 \end{cases}$$

$\frac{a+r}{b+1} = \frac{a-r+b+1}{b+1} \Rightarrow \frac{a+r}{b+1} = \frac{a-r+b+1}{b+1} \Rightarrow \frac{a+r}{b+1} = \frac{a-r+b+1}{b+1}$

$\frac{r-a}{b-1} = \frac{r-a}{b-1} \Rightarrow \frac{r-a}{b-1} = \frac{r-a}{b-1}$

$$\rightarrow g(n) = f(n) \rightarrow \frac{(n+1)(n-1)}{n^2-1} = \frac{n+1}{n-1} \rightarrow f(n) = 0 \rightarrow n = -1 \vee n = 0$$

$g(n) = 0 \rightarrow a = (-1) \vee a = 0$

$g(n) = \frac{(n-1)(n+1)}{(n-1)(n-c)} = \frac{n+1}{n-c}$

$f(n) = \frac{n+1}{n-c}$

$a+b+c = 0$

$$g(n) = (n-2)^r(n) \cdot (n+2)^r(n) = n \left(\frac{-12n}{(n-2)^r - (n+2)^r} \right) = -12n$$

$$f(-1) = 1 \checkmark$$

$$\downarrow$$

$$n=1$$

$$f(r) = r-1 = 0 \checkmark$$

$$\downarrow$$

$$r=-1$$

(2)

9

$$x + \sqrt{x} = 9 \rightarrow x^2 - 17x + 81 = 0$$

$$\rightarrow x^2 - 17x + 81 = 0$$

$$x^2 + 17x = 17x + 81$$

$$= 17x + 81$$

$$= 17x + 81$$

(2)

9

$$f(n) = n(\alpha^p + 1)$$

$$\hookrightarrow f(n-1) = f(1-n) \rightarrow f(n-1) + f(1-n) = 0$$

$$f(n-1) + f(1-n) = f(n-1) + f(1-n) = 0$$

$$D \setminus g = \{1\} \rightarrow b - f(n) = - (f(n) - f(a)) \stackrel{(n=1)}{=} 0$$

$$\hookrightarrow b = 1$$

$$a = \frac{1}{p}$$

$$k = -1$$

$$f(a) - \frac{b}{p} - k = 1 - 1 + 1 = 1$$

(2)

9

$$D_g = \left[\frac{1}{p}, +\infty \right) \rightarrow D_f = (-\infty, \frac{1}{p}]$$

$$(f-g)(r) = \sqrt{r} \rightarrow r+n-\sqrt{r} = 9\sqrt{r} \rightarrow n = 8\sqrt{r}$$

$$\rightarrow m+n = \sqrt{r} + 8\sqrt{r} = 9\sqrt{r}$$

(2)

10