

$$f\left(n - \frac{1}{n}\right) = \frac{n^{r+1}}{n^r}$$

$$n - \frac{1}{n} = -w \rightarrow \left(n - \frac{1}{n}\right)^r = 1 \rightarrow \sqrt[r]{n^r + \frac{1}{n^r}} = 1$$

$$\frac{n^{r+1}}{n^r} = 11$$

$$f(-w) = 11$$

(7)

$$\frac{g}{f} = \left\{ (1, \frac{\sqrt{1}}{-1}) (0, \frac{w}{r}) (\cancel{1, \frac{\sqrt{1}}{1}}) (\cancel{1, \frac{\sqrt{1}}{1}}) \right\} / \frac{f}{g} = \left\{ (1, 0) (1, \frac{-r}{\sqrt{1}}) (0, \frac{r}{w}) (\cancel{1, \frac{\sqrt{1}}{1}}) \right\}$$

$$r f(n) = \left\{ (1, r) (w, 1) (-w, r) (1, -r) \right\}$$

(9)

$$f(n)+1 = \left\{ (1, r) (w, w) (-w, w) (1, -1) \right\}$$

(10)

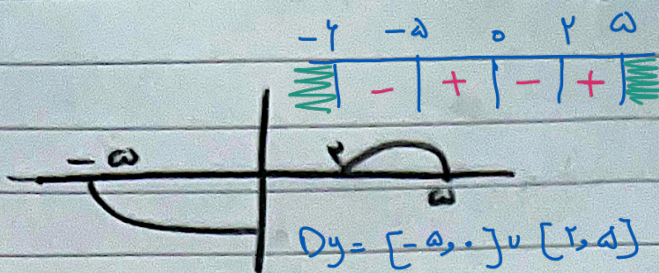
$$f(2n) = \left\{ (1, \frac{r}{2}) (w, \frac{w}{2}) (-w, \frac{r}{2}) (\frac{1}{2}, -\frac{r}{2}) \right\}$$

$$w f'(n)+1 = \left\{ (1, r) (w, r) (-w, 1) (1, 1) \right\}$$

$$f-g = \left\{ (1, r) (1, r) (w, r) \right\}$$

(11)

$$\frac{r f}{g} = \left\{ (1, r) (w, -r) (\cancel{1, \frac{r}{1}}) \right\}$$



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$$D_f = [-r, a] \cup [-a, 0] \quad (1)$$

$f(x) > 0$

$D_f = (-r, 0) \cup (-a, r)$

$$-x \geq 0 \rightarrow x \leq 0 \quad I$$

$$I \cup II \Rightarrow (-r, 0) = D_f$$

در دهم

$$f(x) - r f(r) = x^r - r x + r$$

$\rightarrow x = r \rightarrow -f(r) = +r \rightarrow f(r) = -r$
 $\rightarrow x = -r \rightarrow \boxed{f(-r) = 0}$ ✓

$$f(f(a)) + f(f(1)) = f(a - \sqrt{a+r}) + f(r(1)+a) = f(r) + f(a) \quad (4)$$

$r+r=9$ ✓

$$f(x) = ax^r - bx + r \quad f(x-1) - f(x) = 4x + r$$

$$-ra + (a+b) = 4x + r$$

$$\begin{cases} -ra = 9 \rightarrow a = -9 \\ a+b = r \quad b = a \\ a-b = -1 \end{cases}$$

$a-b = -1$ ✓

$$f(\sqrt{x}-r) = \frac{(\sqrt{x}-r)^r - r(\sqrt{x}-r) + r}{-1} = \frac{r}{-1} = \boxed{\frac{r}{-1}} \quad (6)$$