

$$2f(\omega) = 2(q+1)(\omega+2) = f(-2) + q$$

$$2f(\omega) = 1(q+1) = 2q - 1 + q \Rightarrow 2f(\omega) = 1(q+1) = 2q - 1 \Rightarrow$$

$$2f(\omega) = 2(\sqrt{q+1}) = 2(\sqrt{q}-1) \Rightarrow f(\omega) = \sqrt{q+1} = \sqrt{q}-1 \Rightarrow \omega q = -9 \Rightarrow \boxed{q = -9}$$

$$\sqrt{2-\sqrt{3}} + \frac{1}{\sqrt{2-\sqrt{3}}} + 2 + \sqrt{2+\sqrt{3}} + \frac{1}{\sqrt{2+\sqrt{3}}} + 2 = \boxed{4+2\sqrt{4}}$$

$$\begin{aligned} n: 2f(x) - 3f(-x) &= (x^2 - x) \xrightarrow{x^2} f(x) - 3f(-x) = 1x^2 - 2x \\ -n: 2f(-x) - 3f(x) &= (x^2 + x) \xrightarrow{x^2} 4f(-x) - 9f(x) = 12x^2 + 3x \\ -\circ f(x) &= 10x^2 + x \Rightarrow f(x) = -\frac{10x^2 + x}{5} \Rightarrow \boxed{f(x) = -2x^2 - \frac{x}{5}} \end{aligned}$$

$$\begin{aligned} n=0: 2f(0) &= 3m-1 \Rightarrow (2 \cdot 0) f(0) = 3 \cdot 0 \cdot f'(0+2) = (x \cdot 0 - 0m + 3m-1) \rightarrow \\ 2f(0) &= 3m-1 \Rightarrow \boxed{f(0) = \frac{3m-1}{2} = 1, 5m - \frac{1}{2}} \Rightarrow f(0) = \frac{3m-1}{2} = \frac{3 \cdot 5 - 1}{2} = \boxed{\frac{14}{2}} \\ n=-2: (-2+2)f(-2) &+ 4f(0) = 14 + 2m + 3m-1 \Rightarrow 4f(0) = 15 + 5m \end{aligned}$$

$$f(-1) + f\left(\frac{1}{-1}\right) = \frac{3(-1)^2 - 1(-1) + 3}{-1} \Rightarrow 2f(-1) = \frac{3+1+3}{-1} = \boxed{-7} \Rightarrow$$

$$\boxed{f(-1) = -3.5}$$

$$\boxed{0.5 \leq 0.5}$$

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$$3x \cdot \frac{3m-1}{x} = 9m-3 = 5m+15 \Rightarrow 4m=18 \Rightarrow 2m=9 \Rightarrow \boxed{m = \frac{9}{2}}$$

$$\textcircled{1} \sqrt{r+\sqrt{r}}=a \quad \sqrt{r-\sqrt{r}}=b \Rightarrow a \cdot b = \sqrt{(r+\sqrt{r})(r-\sqrt{r})} = \sqrt{r-r} = \sqrt{0} = 0 \Rightarrow$$

$$a = \frac{1}{b}, b = \frac{1}{a} \Rightarrow \frac{f(r+\sqrt{r})}{f(r+\sqrt{r})} = a + \frac{1}{a} + r = a + b + r, \quad f(r-\sqrt{r}) = b + \frac{1}{b} + r = b + a + r \quad \text{!!}$$

$$f(r-\sqrt{r}) + f(r+\sqrt{r}) = a + b + r + b + a + r = 2a + 2b + 2r = 2(a+b+r) \Rightarrow$$

$$(a+b)^2 = a^2 + b^2 + 2ab = r + r - \sqrt{r} + \sqrt{r} = 2r \Rightarrow a+b = \sqrt{2r} \Rightarrow 2\sqrt{2r} + 2r =$$

$$\boxed{f(r+\sqrt{r})}$$

$$\textcircled{2} f(x) = ax + b, \quad f\left(\frac{1}{x}\right) = \frac{a}{x} + b \Rightarrow f(x) + f\left(\frac{1}{x}\right) = ax + b + \frac{a}{x} + b = a\left(x + \frac{1}{x}\right) + 2b$$

$$, \quad \frac{r x^2 - 12x + r}{x} = r x - 12 + \frac{r}{x} = ax + \frac{a}{x} + 2b \Rightarrow \begin{cases} a = r \\ b = -6 \end{cases}, \quad f(x) = rx - 12$$

$$\boxed{f(-1) = -r - 12 = -18}$$

$$\boxed{r=18}$$

$f(x) = (x-1)\sqrt{1-x} = g(x) = -\sqrt{(1-x)^3} \rightarrow$ از نظر ضابطه برابر $f(x) = (x-1)\sqrt{1-x} \Rightarrow D_f = x \leq 1$ $g(x) = -\sqrt{(1-x)^3} \Rightarrow D_g = \sqrt{1-x} \geq 0 \Rightarrow x \leq 1$	F
$f(x) = x\sqrt{x}, g(x) = \sqrt{x} = \sqrt[3]{x^2}$ $D_f = \mathbb{R} - (-\infty, 0) = [0, +\infty)$ چون تابع در $x=0$ برابر 0 $D_g = x \geq 0 \Rightarrow D_g = [0, +\infty)$ $f(x) = g(x)$	V
$f(x) = [\sqrt{x} - [\sqrt{x}]] , g(x) = \sqrt{x-1}$ $f(x) = 0, g(x) = \sqrt{0}$ $D_f = \mathbb{R} - (-\infty, 0) = [0, +\infty)$ $D_g = \mathbb{R} - (-\infty, 1) = [1, +\infty)$	A
الف) $f(1) = 1, g(1) = 1 \Rightarrow \frac{1+1}{1-1} = 1$ ب) $f(r) = r, g(r) = r \Rightarrow \frac{r+r}{r-r} = 0$ نشد.	1
$2.) f(x) = 0, g(x) = 1 \Rightarrow f(x)g(-1) = 0$	
$g(x) = f(x-1) \Rightarrow g^{(1)} = \{(1,0), (-1,-1), (0,-1), (-2,-1), (2,1)\}$ $h(x) = f(x) \Rightarrow h(x) = \{(1,1), (-1,1), (0,0), (-1,2), (2,2)\}$	1.