

$$u f(u) \geq 0 \quad \begin{cases} u, f(u) \geq 0 \rightarrow [r, 0] \\ u, f(u) \leq 0 \rightarrow [-0, 0] \end{cases}$$

$$[r, 0] \cup [-0, 0] = D_f$$

$$\frac{-u}{f(u)} \geq 0 \quad \begin{cases} +u \geq 0 & f(u) < 0 \rightarrow (0, r) \\ u < 0 & f(u) > 0 \rightarrow (-r, 0) \end{cases}, f(u) \neq r$$

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

$$f(r) - rf(r) = r - r + r \quad f(-r) + r = r + r + r$$

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

$$f(u) = r$$

$$\boxed{f(-r) = 10}$$

$$f(0) = 8 - \sqrt{0+8} = 2 \quad f(0) = 0$$

$$f(f(0)) = f(2) = 8 + r = 9 \quad f(f(u)) = f(0) = 8 - \sqrt{0+8} = 2$$

$$f(f(u)) + f(f(u)) = \boxed{9 + r = 9}$$

$$a(u-r) - bu + b + r - au^r + bu - r = 4u + r$$

$$a(u-r) + b - au^r = 4u + r = au^r + a + r + a + b - au^r = 4u + r$$

$$a - r + a + b = 4u + r$$

$$-ra = 4 \Rightarrow a = -r \quad \boxed{a - b = -r - 0 = -1}$$

$$a + b = r = -r + b \Rightarrow b = 0$$

در (م) B

✓ تکلیف

در هام شهر پاری

$$f(r) = 9 - 9 + 1 = 1$$

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

$$f(1) = r^2 - 4 + 1 = -1$$

$$\frac{r f(r) + f(-1)}{f(r)} = \frac{r \cdot 1 + 0}{1} = \boxed{r}$$

$$f(x) = 3x + 1 = 13$$

$$f(-1) = (-1)^2 = 1$$

$$f(1) = 1 + 1 = 2$$

$$\frac{r f(x) - r f(-1)}{f(r)} = \frac{r \cdot 13 - 1}{2} = \boxed{\frac{13r - 1}{2}}$$

$$f(x) = 1$$

$$f(1) = 1$$

$$f(f(x)) = f(1) = 1$$

$$f(r) = 1$$

$$f(1) = 1$$

$$\frac{f(f(x)) - f(f(r))}{f(x) - r} = \frac{1 - 1}{1 - 1} = \boxed{0}$$

$$f(n) = \frac{(n+r)^r + 0}{(n+r)^r + 1}$$

$$f(r) = \frac{r^r + 0}{r^r + 1} = \boxed{\frac{r}{r+1}}$$

$$f(\sqrt{r}-r) = \frac{\sqrt{r}^r + 0}{\sqrt{r}^r + 1} = \frac{1}{2} = \frac{1}{2}$$

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

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

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

$$(f(\sqrt{n}))^r - f(n) = \left(n + \frac{1}{n}\right)^r - \left(n + \frac{1}{n}\right)^r = \boxed{0}$$