

نام و نام خانوادگی: شماره دانشجویی: کلاس: تاریخ:

$y = \sqrt{x f(x)} = 0 \rightarrow x f(x) = 0$
 $y = f(x)$
 $f(x) = 0, x = 0$
 $[-5, -4] \rightarrow f(x) \leq 0$
 $(-5, 0) \rightarrow f(x) \geq 0$
 $(1, 5) \rightarrow f(x) \geq 0$
 $[-5, 0] \cup [1, 5]$

19, 26

✓

$y = \sqrt{\frac{-x}{f(x)}} = 0 \rightarrow \frac{-x}{f(x)} \geq 0 \rightarrow f(x) \leq 0$
 $x = -4, 0, 1, 5$
 $(-5, -4) \rightarrow f(x) > 0 \rightarrow x < 0 \rightarrow [-5, -4]$
 $(-4, 0) \rightarrow f(x) < 0 \rightarrow x > 0 \rightarrow [-4, 0]$
 $(0, 1) \rightarrow f(x) < 0 \rightarrow x > 0 \rightarrow [0, 1]$
 $(1, 5) \rightarrow f(x) < 0 \rightarrow x > 0 \rightarrow [1, 5]$
 $f(x) = 0$
 $f(0) = 0$
 $f(1) = 0$
 $f(5) = 0$
 $[-5, 5]$
 $[-4, 0]$
 $[0, 1]$
 $[1, 5]$

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

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$f(x) = \begin{cases} x - \sqrt{x+4} & x > 3 \\ x+3 & x \leq 3 \end{cases}$
 $f(f(5)) + f(f(1)) = ?$
 $f(5) = 5 - \sqrt{5+4} = 5 - 3 = 2$
 $f(2) = 2 + 3 = 5$
 $f(1) = 1 + 3 = 4$
 $f(4) = 4 - \sqrt{4+4} = 4 - 2 = 2$

1, 2, 8

$f(x) = ax^2 - bx + 2$
 $f(n-1) - f(n) = 4n + 2$
 $a - b = ?$
 $f(n-1) = a(n-1)^2 - b(n-1) + 2 = a(n^2 - 2n + 1) - b(n-1) + 2 = an^2 - 2an + a - bn + b + 2$
 $f(n) = an^2 - bn + 2$
 $f(n-1) - f(n) = (an^2 - 2an + a - bn + b + 2) - (an^2 - bn + 2) = -2an + a + b$
 $-2an + a + b = 4n + 2 \rightarrow a = -2$
 $a + b = 2 \rightarrow -2 + b = 2 \rightarrow b = 4$
 $a - b = -6$

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۴- برای محاسبه $f(5)$ از رابطه بالا و $f(1)$ از رابطه پایینی استفاده می‌کنیم

$f(5) = 5 - \sqrt{5+4} = 2$
 $f(1) = 2(1) + 3 = 5$

$$\rightarrow f(f(\omega)) + f(f(1)) = f(r) + f(\delta) \quad \underline{f(r) = r(r) + r = V}$$

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

$$\frac{f(x) + f(1)}{f(x)} = \frac{V}{1} = V$$

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

$$f(x) = (-1)^r + \frac{1}{(-1)^r} = \delta$$

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

$$f(x) = \begin{cases} x^r + \frac{1}{x^r} & m \geq r \\ x^r & m < r \end{cases}$$

$$\frac{f(x) - r f(x-r)}{f(x)} = \left(\frac{r}{V} \right)$$

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

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

$$f(r) = r \times r + 1 = V$$

$$f = \{(r, 4), (r, r), (r, 1), (1, 4)\}$$

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

$$f(r) = 4$$

$$f(r) = r$$

$$f(x) = 1$$

$$f(1) = 4$$

$$f(f(x)) = f(r) = 4$$

$$f(f(x)) = f(1) = 4$$

$$f(1) = 4$$

$$f(x) = \frac{x^r + \epsilon x + 9}{x^r + \epsilon x + 8}$$

$$f(f(\sqrt{r}-r)) = ?$$

$$x^r + \epsilon x + 9 = (x+r)^r + 8, \quad x^r + \epsilon x + 8 = (x+r)^r + 1$$

$$(x+r)^r + 8 = (x+r)^r + 1$$

$$\frac{(x+r)^r + 8}{(x+r)^r + 1} \xrightarrow{x=\sqrt{r}-r} \frac{(\sqrt{r})^r + 8}{(\sqrt{r})^r + 1} = \frac{1}{\epsilon} = r$$

$$f(r) = \frac{r^r + \epsilon(r) + 9}{r^r + \epsilon(r) + 8} = \left(\frac{r}{V} \right)$$

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

$$(f(\sqrt{n}))^r = f(n) = ?$$

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

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