

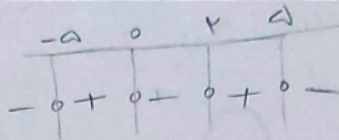
نام و نام خانوادگی پریمیا کبری پاسخنامه تشریحی تکلیف شماره ۷... کلاس (۳) (۲) (۱)

$$f(x) = \sqrt{x f(x)}$$

$0 \leq x \leq \pm \Delta, 2$

$$x f(x) \neq 0$$

$$D_f = [-\Delta, 0] \cup [2, \Delta]$$



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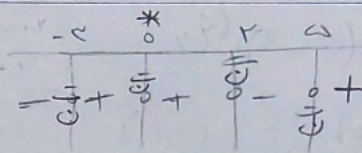
$$f(x) = \sqrt{\frac{-x}{f(x)}}$$

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

$-\Delta \leq x \leq \Delta$

$$D_f = ((-\infty, -2) \cup (2, +\infty)) - \{0\}$$

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$$f(x) - 2f(2) = x^2 - 2x + 4 \xrightarrow{f(2) = -2, x = -2} f(-2) - 2f(2) = 4 + 4 + 4 \rightarrow f(-2) = 10$$

$$(f(2) - 2f(2) = 4 - 4 + 4 \rightarrow f(2) = -2)$$

$\leftarrow$ (۲، ۱) و (۱، ۲) را بنویسیم

۳

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

$$1 \leq x \xrightarrow{n=1} 2+2=4, \Delta > 2 \xrightarrow{n=4} 4 - \sqrt{4+4} = 2, 2 \leq x \xrightarrow{n=2} 2+2=4$$

$$f(f(4)) + f(f(1)) = 4 + 2 = 6$$

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$$f(n) = an^2 - bn + 2 \xrightarrow{n=1} f(1) = a - b + 2 \rightarrow a - b = f(1) - 2, f(0) = 2$$

$$f(n-1) - f(n) = 4n + 2 \xrightarrow{n=1} f(0) - f(1) = 4 \rightarrow f(1) = 2 - 4 = -2$$

$$a - b = -4 - 2 = -6$$

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$f(n) = n^2 - 3n + 1 \quad n=3 \rightarrow f(3) = 9 - 9 + 1 = 1$ $n=1 \rightarrow f(1) = 1 - 3 + 1 = -1$ $\frac{3f(3) + f(1)}{f'(3)} = \frac{3(1) + (-1)}{(-1)^2} = \frac{2}{1} = 2$	6
$f(n) = \begin{cases} 3n+1 & n \geq 2 \\ n^2 & n < 2 \end{cases}$ $n=2 \rightarrow 3n+1 = 7, \quad n=1 \rightarrow (-1)^2 = 1$ $n=2 \rightarrow 3n+1 = 7$	7
$\frac{3f(3) - 2f(2)}{f'(2)} = \frac{3(12) - 2(4)}{2} = \frac{36 - 8}{2} = \frac{28}{2} = 14$	8
$f = \{(3,4), (2,2), (1,1), (0,0)\}$ $\frac{f(f(3)) - f(f(2))}{f'(3) - 2} = \frac{4 - 2}{4 - 2} = 1$	9
$f(n) = \frac{n^2 + 6n + 9}{n^2 + 6n + 9}$ $f(f(\sqrt{n}-2))$ $f(\sqrt{n}-2) = \frac{(\sqrt{n}-2)^2 + 6(\sqrt{n}-2) + 9}{(\sqrt{n}-2)^2 + 6(\sqrt{n}-2) + 9} = \frac{n - 4\sqrt{n} + 4 + 6\sqrt{n} - 12 + 9}{n - 4\sqrt{n} + 4 + 6\sqrt{n} - 12 + 9} = \frac{1}{1} = 1$ $f(2) = \frac{4 + 12 + 9}{4 + 12 + 9} = \frac{25}{25} = 1$	10
$f(n) = n^2 + \frac{1}{n^2}$ $\frac{(f(\sqrt{n}))^2 - f(n)}{n + \frac{1}{n}} = \frac{(n + \frac{1}{n})^2 - (n^2 + \frac{1}{n^2})}{n + \frac{1}{n}} = \frac{n^2 + 2 + \frac{1}{n^2} - n^2 - \frac{1}{n^2}}{n + \frac{1}{n}} = \frac{2}{n + \frac{1}{n}}$ $f(\sqrt{n}) = (\sqrt{n})^2 + \frac{1}{(\sqrt{n})^2} \rightarrow f(\sqrt{n}) = n + \frac{1}{n}$ چون وقتی $n \rightarrow \infty$ $\frac{1}{n} \rightarrow 0$ پس $f(\sqrt{n}) \approx n$ برسانیم جوابشان یکی می شود فقط همان یک حالت را بسازیم	11