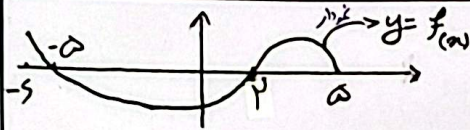


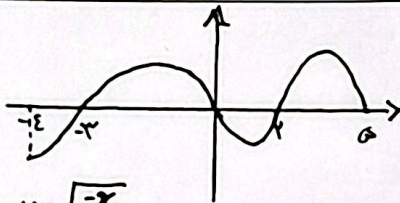
نام و نام خانوادگی: آید محمد جلیلی پاسخنمه تشریحی تکلیف شماره ... ۷ ... کلاس ... ۷ ... آید محمد جلیلی ۴:۳۰



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

$$D_y = [-5, 0] \cup [2, 5]$$

۱



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

$$D_y = (-3, 2) - \{0\}$$

۲

$$f(x) - 2f(x) = x^2 - 2x + 2 \xrightarrow{x=2} f(2) - 2f(2) = 2 - 2 + 2 = 2 \Rightarrow$$

$$f(2) = -2 \Rightarrow f(x) = x^2 - 2x$$

$$f(-2) = ?$$

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

۳

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

$$f(1) = 2 = 2 + 2 \Rightarrow f(f(1)) = f(2) = 2 - \sqrt{2+2} = 2$$

$$f(f(2)) = f(2) = 2 \times 2 + 2 = 6$$

۴

$$f(f(2)) + f(f(1)) = 9$$

$$f(x) = ax^2 - bx + 2$$

$$f(x-1) - f(x) = 4x + 2 \xrightarrow{x=1} f(0) - f(1) = 4 + 2 = 6 \Rightarrow 2 - a + b - 2 = b - a = 6 \Rightarrow$$

$$a - b = -6$$

$$a - b = ? = -6$$

۵

$f(n) = n^2 - 1$ $f(9) = 9 - 9 + 1 = 1$ $f(1) = 1 - 1 + 1 = 1$ $f(1) = -1$ $\frac{f(n) + f(n-1)}{f(n)} = \frac{1 + 1}{1} = 2$	6
$f(x) = \begin{cases} x+1 & x \geq 1 \\ x^2 & x < 1 \end{cases}$ $f(1) = 2$ $f(1) = 1$ $f(1) = 1$ $\frac{f(1) - f(1)}{f(1)} = \frac{2 - 1}{1} = 1$	7
$f = \{(1, 5), (2, 1), (3, 1), (4, 1)\}$ $\frac{f(1) - f(1)}{f(1) - 1} = \frac{f(1) - f(1)}{5 - 1} = \frac{5 - 5}{4} = 0$	8
$f(n) = \frac{n^2 + 2n + 1}{n^2 + 2n + 1} = \frac{(n+1)^2 + 1}{(n+1)^2 + 1}$ $f(\sqrt{n}) = \frac{(\sqrt{n})^2 + 2 + 1}{(\sqrt{n})^2 + 1} = \frac{n + 3}{n + 1} = 1$ $f(1) = \frac{1 + 2 + 1}{1 + 2 + 1} = 1$ $f(\sqrt{n}) = f(1) = 1$	9
$f(n) = n^2 + \frac{1}{n^2}$ $(f(\sqrt{n}))^2 - f(n) = ? = \left(\frac{1}{n} + n\right)^2 - \left(n^2 + \frac{1}{n^2}\right) = 2$ $n^2 + \frac{1}{n^2} + 2 \cdot n \cdot \left(\frac{1}{n}\right) = n^2 + \frac{1}{n^2} + 2$	10