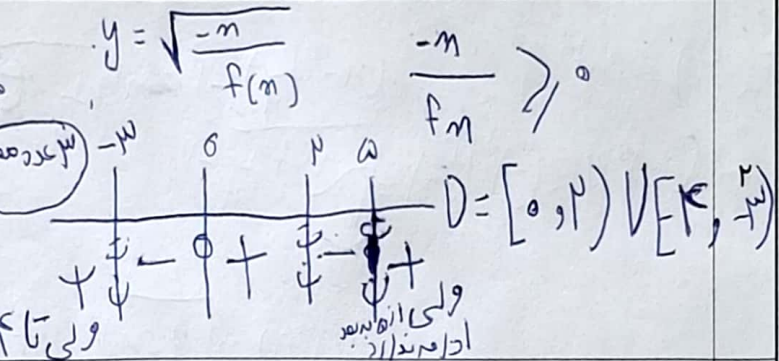
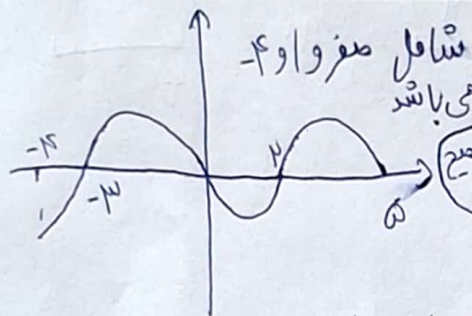
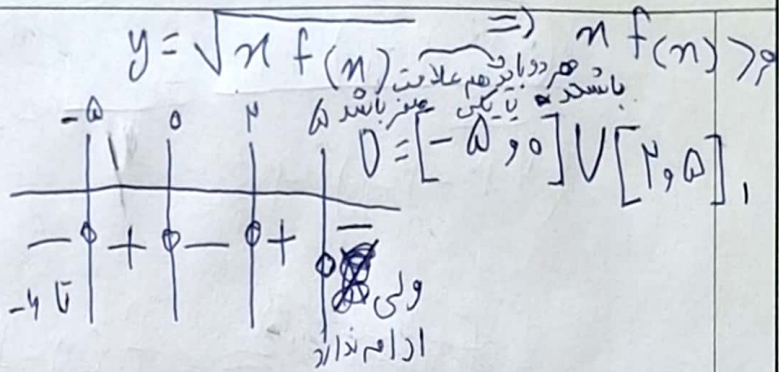
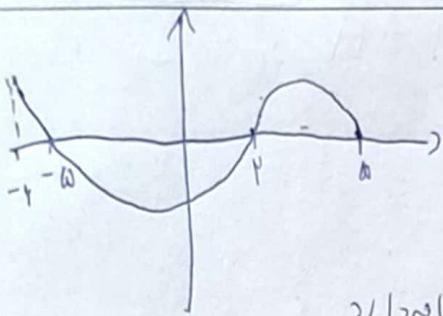




$f(x) - 2f(2) = x^2 - 4x + 4$ $f(-2) = ?$

$x=2 \Rightarrow f(2) - 2f(2) = 4 - 4 + 4 = 4 \Rightarrow f(2) = -4$

$f(-2) + \frac{2 \times (-2)}{-4} = (-2)^2 + 4 + 4 = 14 \Rightarrow f(-2) = 14 + 4 = 18$

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

$f(f(0)) + f(f(1)) = f(5 - \sqrt{4})$

$+ f(2+3) = f(2) + f(5) = 4 + 5 - \sqrt{4} = 9$

$a-b = ?$ $(-3-5 = -8)$ $f(n-1) - f(n) = 4n+2$ $f(n) = an^2 - bn + 2$

$a(n-1)^2 - b(n-1) + 2 - an^2 + bn - 2 = 4n+2$

$an^2 - 2an + a - bn + b + 2 - an^2 + bn - 2 = 4n+2$

$\Rightarrow -2an + a - b + b = 4n+2$ $-2an = 4n$

$\Rightarrow a = -2$ $a+b = 2 \Rightarrow -2+b = 2 \Rightarrow b = 4$

$$f(\sqrt{w}-v)$$

$$f(n) = \frac{n^p + kn + a(n+v)^p + 1}{n^p + kn + v(n+v)^p + w}$$

$$\frac{(\sqrt{w}-v+n)^p + 1}{(\sqrt{w}-v+n)^p + w}$$

$$= \frac{k}{v} = \frac{v}{w}$$

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$$f(n) = n^p - v$$

$$\left(n - \frac{1}{n}\right)^p - v = n^p + \frac{1}{n^p} - v$$

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

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$$f(-3) = (-3)^p - v = \sqrt[p]{n^p + \frac{1}{n^p} - v}$$

الف) $\frac{f}{g} = \left\{ \left(2, \frac{0}{\sqrt{5}}\right), \left(1, \frac{q-m^p}{\sqrt{p}}\right), \left(0, \frac{p}{\sqrt{q}}\right) \right\}$

ب) $\frac{g}{f} = \left\{ \left(2, \frac{0}{\sqrt{5}}\right), \left(1, \frac{p\sqrt{p}}{-\sqrt{q}}\right), \left(0, \frac{p}{\sqrt{q}}\right) \right\}$

$g(n) = \sqrt{q-n^p}$ $f(n) = \{(2,0), (1,-4), (0,2), (v,1)\}$

$q-m^p > 0 \Rightarrow m^p < q \Rightarrow -2 \leq m \leq 2$

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الف) $f(n) = \{(2,2), (3,8), (-5,4), (1,-4)\}$

ب) $f(n) + 1 = \{(2,3), (3,9), (-5,5), (1,-3)\}$

ج) $f(n) + 1 = \{(2,2), (3,9), (-5,3), (1,-1)\}$

د) $f(2n) = \left\{ \left(1,1\right), \left(\frac{p}{2}, 4\right), \left(-\frac{5}{2}, 2\right), \left(\frac{1}{2}, -4\right) \right\}$

$f(n) = \{(2,1), (3,4), (-5,2), (1,-2)\}$

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الف) $f-g = \{(1,4), (2,2), (3,2)\}$

ب) $\frac{f}{g} = \{(1,4), (2,2), (3,-2)\}$

$g(n) = \{(1,0), (2,1), (-1,4), (-2,3), (3,-1)\}$

$f(n) = \{(2,3), (v,2), (1,4), (3,1), (5,2)\}$

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