

$$f(n) = \frac{n^2}{2} + 2n + 1 + 9\frac{n^2}{2} + 1 - 9n + \frac{m^2}{2} + 2n + mn = 1 \cdot \frac{n^2}{2} + \frac{m^2}{2} - 6n + mn + mn$$

$$f(n) = -6$$

$$\{(f, -1), (f, p+1), (p+2, -1), (-1, p+k)\}$$

$$p = -11$$

$$-11 + k = -1 \Rightarrow k = 10$$

$$-10$$

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$$1) \sqrt{\frac{n-2}{(n^2-4)(n^2-2)}} = \sqrt{\frac{n-2}{(n-2)(n+2)(n+\sqrt{2})(n-\sqrt{2})}}$$

$$n^2 - 2n^2 - 1 = (n^2 - 2)(n^2 + 2)$$

$$D = (-2, -\sqrt{2}) \cup (\sqrt{2}, 2)$$

$$2) [-n] \neq 2 \Rightarrow n \in [-2, -3) \cup [2, 3)$$

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$$1) n(2-n) > 0 \Rightarrow \left\{ \begin{array}{l} -1 < n < 2 \\ n > 0 \end{array} \right\} \cap \Rightarrow [1, 2)$$

$$2) \sqrt{|n-2|-n^2} \geq 0 \Rightarrow |n-2|-n^2 \geq 0 \Rightarrow |n-2| \geq n^2 \Rightarrow n-2 \geq n^2 \Rightarrow n^2 - n + 2 \leq 0 \Rightarrow [-2, 1)$$

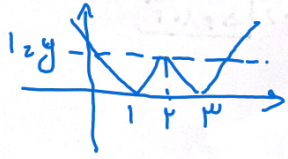
$$||n-2|-1| = k \Rightarrow |n-2|-1 = k \text{ or } |n-2|-1 = -k$$

$$|n-2| > 1 \Rightarrow |n-2|-1 = k \quad (I)$$

$$|n-2| < 1 \Rightarrow -|n-2|+1 = k \quad (II)$$

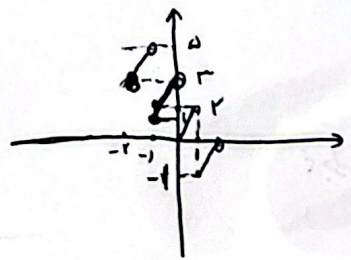
$$(I) \Rightarrow n > 2 \Rightarrow |n-2| = n-2 \Rightarrow n-2-1 = k \Rightarrow n = k+3$$

$$(II) \Rightarrow n < 2 \Rightarrow |n-2| = 2-n \Rightarrow -2+n+1 = k \Rightarrow n = k+1$$

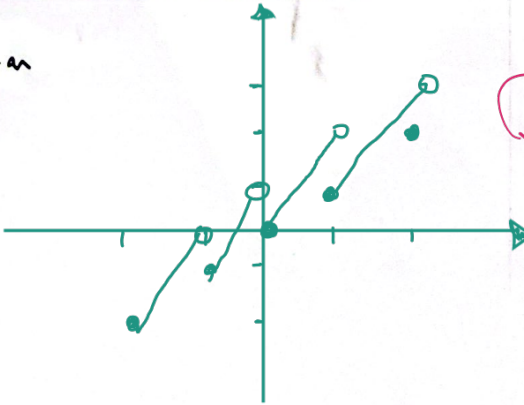


$$\Rightarrow k \leq 1$$

بارسم شکل راجع به جواب می‌رسد!



$$\begin{aligned} x \in [0, 1) &\Rightarrow y_m \\ x \in [1, 2) &\Rightarrow y_m - 1 = x \\ x \in [-1, 0) &\Rightarrow y_m + 1 \\ x \in [2, 3) &\Rightarrow y_m + 2 \end{aligned}$$



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$$\frac{(n-r)(n-1)}{n+a} + b \leq n \Rightarrow \begin{matrix} a \leq -r, b \leq 1 \\ a \leq -1, b \leq 1 \end{matrix} \quad \begin{matrix} -r-1 \leq -f \\ -1-1 \leq -r \end{matrix} \quad \{-f, -r\}$$

1, Va

if $a \leq -1 \rightarrow n-r+b \leq r \rightarrow b \leq r \rightarrow a-b \geq -1-r \geq -2$

$$\frac{a^r + r a^{r-1} - a - r \left(\frac{a^r - 1}{a+r} \right)}{a^r - a} \quad C \leq r$$

1, Va

$$\frac{a n + r}{n+b} \leq a+r \quad a n + r \leq a^r + (r+b) a + r b$$

$$f(1) \leq r \rightarrow \frac{a+r}{b+1} \leq r$$

$$f(-1) \geq 1 \rightarrow \frac{-a+r}{b-1} \geq 1 \rightarrow \begin{matrix} a \leq r \\ b \leq r/a \end{matrix} \rightarrow C+b \leq r, a$$

$$r\sqrt{f-r} + rk - r - \sqrt{b-f} + rk \leq k \Rightarrow Df = \left[\frac{ra}{r}, +\infty \right)$$

$$r\sqrt{f-r} - \sqrt{b-f} + rk - r \geq k$$

$$\sqrt{15-12a} - \sqrt{b-f} \geq r-fk$$

$$15-12a + b-f - r\sqrt{(b-f)(15-12a)} \geq f+15kr-15k$$

$$Dg = \left(-\infty, \frac{b}{r} \right]$$

$$\frac{ra}{r} = \frac{b}{r} \leq 1 \rightarrow b \leq r \rightarrow a \leq \frac{f}{r}$$

$$r f(c) - g(c) \leq k \rightarrow k \leq -1 \rightarrow r\left(\frac{f}{r}\right) - \frac{f}{r} - (-1) \leq r$$

msv

$$\sqrt{v-n} + n = \sqrt{r n + r} \Rightarrow r+n - r\sqrt{r} = \sqrt{r}$$

كامل! له حل نبويس!

$$n = \sqrt{r} - r \Rightarrow \boxed{5 + \sqrt{12}}$$

سوال 10

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