

الف) $\sin^2(x + \frac{\pi}{2}) - 1$ $\begin{cases} 1 \rightarrow 1-1=0 \\ 0 \rightarrow 0-1=-1 \end{cases}$

$R = [-1, 1]$

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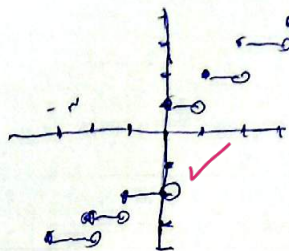
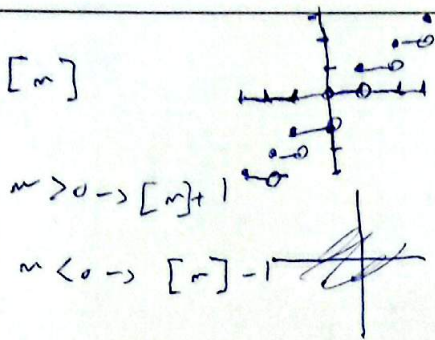
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ب) $\cos^2 x - 1$ $\begin{cases} 1 \rightarrow 1-1=0 \\ -1 \rightarrow -1-1=-2 \end{cases}$

$R = [-2, 0]$

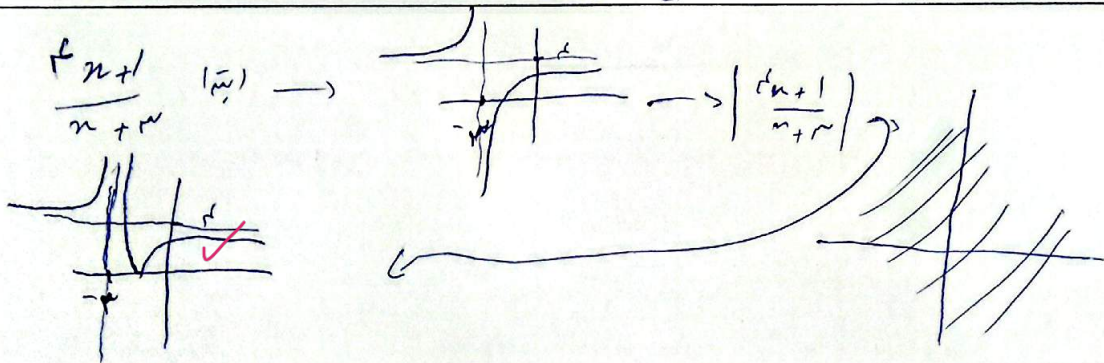
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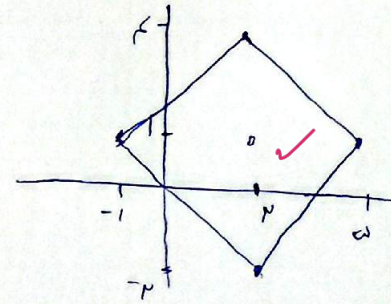
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$|x-2| + |y-1| = 3$ $\begin{cases} x-2+y-1=3 \Rightarrow y=-x+6 \\ x-2-y+1=3 \Rightarrow y=-x-2 \\ -x+2+y-1=3 \Rightarrow y=x+2 \\ -x+2-y+1=3 \Rightarrow y=-x-2 \end{cases}$



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الف) $\sqrt{x+\frac{1}{4}} = t \Rightarrow t \geq \sqrt{r} \rightarrow t^2 + 2t \begin{cases} \frac{-b}{2a} = -\frac{r}{2} = -1 \\ \sqrt{r} \rightarrow r + 2\sqrt{r} \end{cases} R = [4, \infty)$

ب) $3 + 3 \sin(\omega) - \sin^2(\omega) - \sin^2(\omega) = -\sin^2(\omega) + 2 \sin(\omega) + 3$ $\begin{cases} -\frac{b}{2a} = -\frac{r}{2} = 1 \\ -1 \\ 0 \end{cases}$

$1 \rightarrow -1 + 2 + 3 = 4$

$-1 \rightarrow 1 - 2 + 3 = 2$ $0 \rightarrow 0 + 0 + 3 = 3$ $R = [2, 4]$

$$f_{(1)} = -\frac{1}{r} + 1, \quad f_{(2)} = -\frac{2}{r} + 1, \quad f_{(3)} = -1 + 1, \quad \dots$$

$$\sum_1^q f_{(r)} = q(1) + \left(\frac{q \times 1}{r}\right) \left(-\frac{1}{r}\right) = q_0 - 1 = \checkmark$$

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$$a = \checkmark \rightarrow \sqrt{b^2 + c} = f_{(r)} \quad r b + c \geq 0$$

$$r b \geq -c$$

$$r b + c = 1 \rightarrow r b - r b = b = 1 \rightarrow c = -r$$

$$\sqrt{r^2 + f} \rightarrow R = [r, \infty)$$

صفحه افزا...

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$$x^2 + ax^2 + bx - 1 = 0 \text{ مکتوب } = (x-2)^2 = x^2 - 4x + 4 = x^2 + ax^2 + bx - 1$$

$$a = \checkmark, \quad b = 1$$

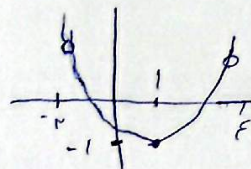
$$-4 \rightarrow y = x - 2 = -4 - 2 = -6$$

$$12 \rightarrow y = x - 2 = 12 - 2 = 10 \quad R = [-1, 1]$$

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



ایضاً

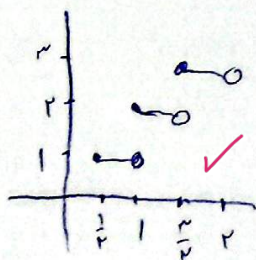
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راه حل!!

$$-r + f \quad f\left(-\frac{r}{r}\right) = f(-1) = \checkmark$$

$$a + d = r \quad (s = -1)$$



$$\frac{1}{r} \leq n < 1 \rightarrow 1 = 0 + 1$$

$$1 \leq n < \frac{r}{r} \rightarrow 1 + 1 = 2$$

$$r \leq n < 2 \rightarrow 1 + r = r$$

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۷- با توجه به دامنه، زیر رادیکال خط با شیب مثبت بوده یعنی $a=0$ است و نقطه $(2,0)$ هم در معادله خط صدق میکند...

$$\begin{cases} (2,0) \rightarrow 2b+c=0 \\ (3,1) \rightarrow 3b+c=1 \end{cases} \rightarrow b=1 \text{ و } c=-2$$

$$g(x) = \sqrt{x^2+4} \rightarrow \left. \text{ext} \right|_4^0 \Rightarrow Rg = \sqrt{[4, +\infty)} = [2, +\infty)$$