

مسار کلی: ۲۳

تلف : دوا، دهم دسر B ۲۰ آخرین ضمیمه کامل نوشتی!

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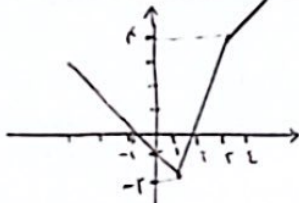
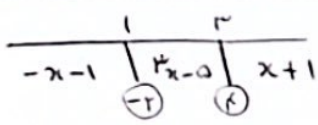
$$D_f \Rightarrow x^r - x + 1 \neq 0 \rightarrow \Delta < 0 \rightarrow D_f = \mathbb{R}$$

$$R_f \Rightarrow y = \frac{x^r - x + 1}{x^r - x + 1} \rightarrow x^r y - xy + y = x^r - x + 1 \rightarrow (y-1)x^r - (y-1)x + y - 1 = 0$$

$$x = \frac{(y-1) \pm \sqrt{(y-1)^2 - 4(y-\frac{1}{2})(y-1)}}{2(y-1)} \xrightarrow{\Delta \geq 0} (y-1)^2 - 4(y-\frac{1}{2})(y-1) \geq 0 \rightarrow (y-1)(1-2y) \geq 0$$

$$\rightarrow \frac{1}{-1+1} \rightarrow \cdot \cdot \cdot \rightarrow (x) \rightarrow \dots \rightarrow R_f = [0, 1] \checkmark$$

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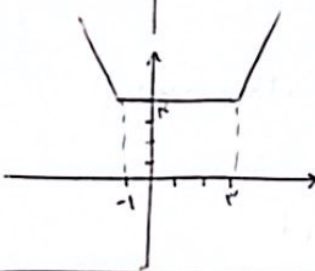
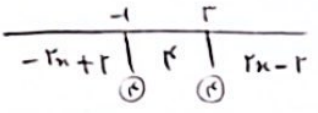


$$R_f = [-1, +\infty) \checkmark$$

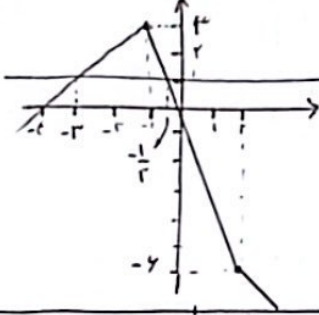
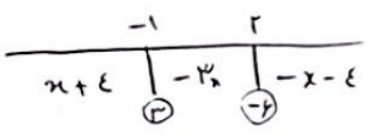
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$$R_f = [r, +\infty) \checkmark$$



$$y=1 \rightarrow x \in (-\infty, -1] \cup [-\frac{1}{r}, +\infty) \checkmark$$

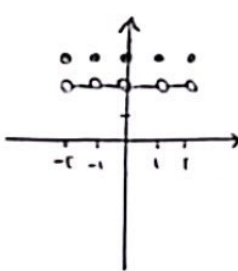
26)

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$$28) y = [x] + [-x] + r$$

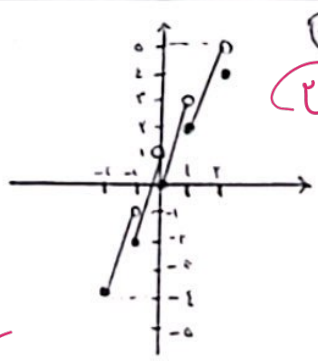
$$\begin{cases} x \in \mathbb{Z} \rightarrow y = 0 + r = r \\ x \in \mathbb{Z} \rightarrow y = -1 + r = r-1 \end{cases}$$

$$R_f = \{r, r-1\} \checkmark$$



$$\begin{cases} -r < x < -1 \rightarrow y = r+1 \\ -1 < x < 0 \rightarrow y = r+1 \\ 0 < x < 1 \rightarrow y = r \\ 1 < x < 2 \rightarrow y = r-1 \\ x = 2 \rightarrow y = r \end{cases}$$

$$R_f = [-1, 0) \checkmark$$



29)

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$$31) \begin{matrix} \nearrow \text{min} \\ \searrow \text{max} \end{matrix} \sin x = -1 \rightarrow y = r \text{ max}$$

$$\rightarrow R_f = [\frac{r}{2}, r] \checkmark$$

$$\sin x = 1 \rightarrow y = 1$$

$$\sin x = \frac{1}{r} \rightarrow y = \frac{r}{2} \text{ min}$$

$$32) \begin{matrix} \nearrow \text{min} \\ \searrow \text{max} \end{matrix} \sin^r x = 0 \rightarrow y = 1 \text{ min}$$

$$\rightarrow R_f = [1, r] \checkmark$$

$$\sin^r x = -\frac{1}{r} \times$$

33)

34)