

الف) $y = x^2 - 2mx + m$

$y = (x-1)^2 + 1$

$(x-1)^2 = y-1 \quad x-1 = \sqrt{y-1} \quad x = \sqrt{y-1} + 1$

$\rightarrow y = \frac{1}{x^2 - 2x}$

$x^2y - 2xy = 1 \rightarrow x^2y - 2xy - 1 = 0$

$y^2y \geq 0 \quad y(y+1) \geq 0$

$\frac{-1}{2} < y < 0$

$y \neq 0$

$R_f = (-\infty, -1] \cup (0, +\infty)$

الف: دایره محبتانی $R_f = \mathbb{R}$ $\rightarrow$ دایره محبتانی $\rightarrow$ دایره محبتانی $\rightarrow$ دایره محبتانی

الف) $y = x^2 - 4x + 1$ $\frac{a > 0}{m+n} \quad m+n = \frac{-b}{a} \rightarrow \frac{4}{1} = 4$

$R_f = [4, +\infty)$

$y = -x^2 + 4x + 1$

$R_f = (-\infty, 14]$

2) $y = x^2 - 4x - 1$

$R_f = [0, +\infty)$

3) $y = 4x - x^2$

$R_f = [0, 4]$

الف) $y = x^2 - 4x + 1$

ب) $y = x^2 - 4x + 1$

2) $y = x^2 - 4x + 1$

3) $y = (x^2 - 4x + 1)^2$

الف) $y = \frac{x+1}{x-1}$

ب) $R = \mathbb{R} - \{\frac{1}{2}\}$

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الف) $y = \sqrt{\frac{x+1}{x-1}}$

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3) $R = \mathbb{R} - \{\frac{1}{2}\}$

2) $y = \frac{x+1}{x-1} \rightarrow R = \mathbb{R} - \{\frac{1}{2}\}$

$R = \mathbb{R} - \{\frac{1}{2}\} \rightarrow R_1 = \mathbb{R} - \{\frac{1}{2}\}$

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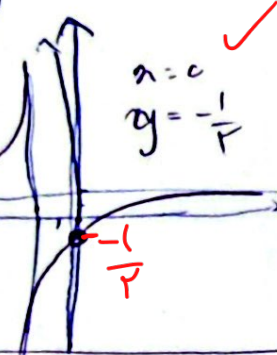
$$y = \frac{2n-1}{n+2}$$

$$\text{مجاوب افقی} = \frac{a}{c} = \frac{2}{1} = 2 \quad (2)$$

$$\text{مجاوب عمودی} = n+2=0 \Rightarrow n=-2 \quad (2)$$

این تپه ها
شود!

$$n=0 \\ y=-\frac{1}{2}$$

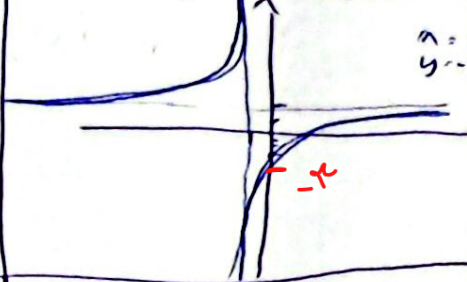


$$y = \frac{2n-1}{n+1} \quad (1) \text{ اف}$$

$$\text{مجاوب افقی} = \frac{a}{c} = \frac{2}{1} = 2 \quad (2)$$

$$\text{مجاوب عمودی} = n+1=0 \Rightarrow n=-1 \quad (2)$$

$$n=0 \\ y=-1$$



$$\text{اف} y = \sin x, \frac{1}{\sin x}$$

sin x همواره مثبت است
مجاوب عمودی

$$R = [2, +\infty) \cup (-\infty, -2] \quad (2)$$

$$2) \sqrt{\frac{n^2}{n}} = \sqrt{n} \Rightarrow \frac{n^2}{n} = n \Rightarrow \frac{1}{\sqrt{n}} = \frac{1}{\sqrt{n}} \Rightarrow \frac{1}{\sqrt{n}} = \frac{1}{\sqrt{n}}$$

$$R = (-\infty, -2] \cup [2, +\infty) \quad (2)$$

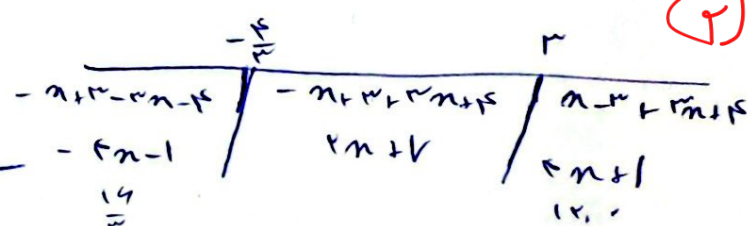
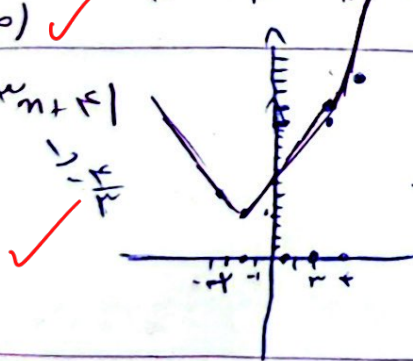
$$\text{اف} = y = n^2 + \frac{1}{n^2 + 2}$$

$$y+2 = n^2 + \frac{1}{n^2 + 2} \Rightarrow n^2 + 2 = n^2 + \frac{1}{n^2 + 2} \Rightarrow \frac{1}{n^2 + 2} = \frac{1}{n^2 + 2}$$

$$y+2 = \frac{n^2 + 2 + 1}{n^2 + 2} = \frac{n^2 + 3}{n^2 + 2} \Rightarrow \frac{1}{n^2 + 2} = \frac{1}{n^2 + 2}$$

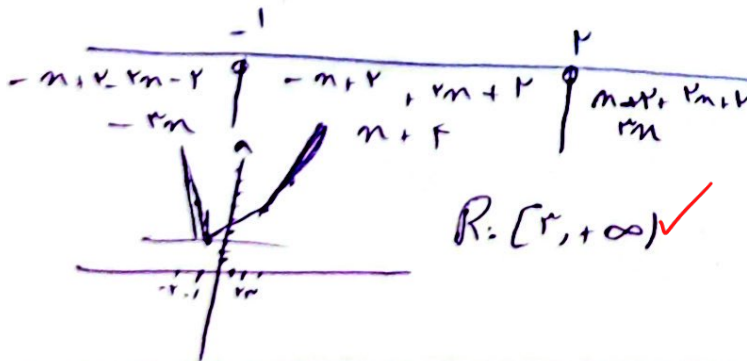
$$R = [\frac{1}{2}, +\infty) \quad (2)$$

$$y = |n-2| + |n+2|$$

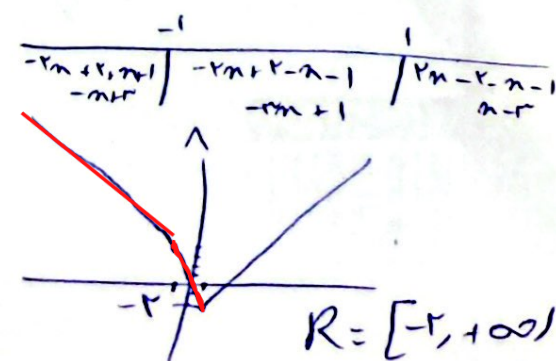


$$y = |n-2| + |n+2|$$

$$\text{اف} y = |2n-1| - (n+1) \quad (2)$$



$$R = [2, +\infty) \quad (2)$$



$$R = [-2, +\infty) \quad (2)$$