

$$\begin{aligned} f(n) - n f(n) &\leq (n+1) \xrightarrow{\times n} n f(n) - n^2 f(n) \leq (n+1)/n \\ f(n) - n f(n) &\leq (n+1) \xrightarrow{\times (-1)} -f(n) - n f(n) \leq -(n+1) \end{aligned}$$

$$f(n) \leq \frac{(n+1)/(n+1)}{(n+1)}$$

میشود $\Rightarrow f(0) \leq 1 \Rightarrow f(n) \leq n^2 - 1 \Rightarrow f(n) \leq n^2 - 1$

$$n^2 - (2y) n - y = 0$$

$$y = \frac{1 \pm \sqrt{1 - 4y - 4y - 1}}{2} \quad y = -y - y$$

$$R_y = (-\infty, -1] \cup [1, +\infty)$$

الف) $-\frac{b}{2a} = \frac{1}{2} \Rightarrow x_1 \quad y_1 = -\frac{1}{2} \quad R_y = [-\frac{1}{2}, +\infty)$

ب) $-\frac{b}{2a} = 1 \quad \sqrt{(1-1)} \Rightarrow R_y = [0, 1]$

2.) $\sqrt{1-p} \Rightarrow R_y \leq \sqrt{1-p} \Rightarrow [0, +\infty)$

> > |p

الف) $|R| = \{ \frac{1}{2} \}$

ب) $\sqrt{1-p} \Rightarrow [0, +\infty) = \{ \frac{1}{2} \}$

2.) $\sqrt{1-p} = \frac{1}{\sqrt{1-p}} \Rightarrow \left[\sqrt{1-p}, \frac{1}{\sqrt{1-p}} \right]$

$\sqrt{1-p} = \frac{1}{\sqrt{1-p}}$ معکوس متقابل

> > $\frac{1}{n^2} = \frac{1}{n^2} \Rightarrow \frac{1}{n^2} = \frac{1}{n^2} \Rightarrow R_y = \left[\frac{1}{n^2}, +\infty \right)$

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رویکر اصلی : $3n^2 - y n^2 \leq y \leq (3-y) n^2 + y + 6 \leq 0$

$\Rightarrow -t(3-y)(y+6) \geq 0$

$\Rightarrow R_y = (-\infty, -6] \cup [-3, \infty)$

مهر باز نیست چون تابع ضربی را میفرستد و در نهایت خارج صفر

رویکر اصلی $\rightarrow \min n^2 \leq y \leq \frac{6}{-1} = -6$

$\rightarrow \max n^2 \leq \infty \quad \frac{3\infty + 6}{2-3} \leq 3$

خارج میگذارد صفر نشود $\rightarrow (-\infty, -6] \cup [-3, \infty)$

✓

$\min \sin m \rightarrow d(m) \leq \frac{1}{-6} = \left(-\frac{1}{6}\right)$
 $\max \sin m \rightarrow d(m) \leq (-3)$

خارج میگذارد صفر نشود $\Rightarrow R_y \leq \left[-\frac{1}{6}, -3\right]$

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الف) $y = \left\{ \frac{3n-1}{2n} \right\} \quad R_y = [0, \infty) - \left\{ \frac{3}{2} \right\}$

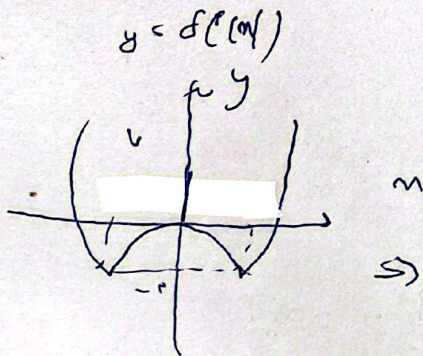
ب) $\sqrt{\frac{9}{4}} = \frac{3}{2} \Rightarrow R_y = \left\{ \frac{3}{2} \right\}$

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$y = \begin{cases} n^2 - m^2 & n \geq m \\ -n^2 + m^2 & n < m \end{cases} \Rightarrow \frac{1}{4} \leq 1 \leq \min \Rightarrow R_y = [0, \infty)$
 $\Rightarrow \frac{1}{4} \leq 1 \Rightarrow R_y = (-\infty, 0]$

$I \cup J \subseteq R \subseteq R_y$

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$y = |f(m) - 1|$

