

$$a) y = \frac{|n|+1}{|n|-2} \quad |n| = -\frac{-y-1}{y-1} = \frac{y+1}{y-1} \quad \frac{-\frac{1}{2}}{+\frac{1}{2}-\frac{1}{2}+}$$

$$R = (-\infty, -\frac{1}{2}] \cup (1, +\infty)$$

$$b) y = \frac{n^2+1}{|n|} = |n| + \frac{1}{|n|} \quad R = [2, +\infty)$$

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

$$n = \frac{(y-2) \pm \sqrt{(y-2)^2 + 4(2+2y)}}{2} \rightarrow y^2 - (y+1) + 1 + 2y \geq 0$$

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

$$\frac{-4}{+4-4+}$$

$$R = (-\infty, -4] \cup [-2, +\infty)$$

$$n^2 - n + 1 \neq 0 \rightarrow \Delta < 0 \quad \text{مساواة برقرار} \rightarrow D = \mathbb{R}$$

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

$$(y-1)n^2 + (1-y)n + y - \frac{1}{2} = 0$$

$$n = \frac{(y-1) \pm \sqrt{(y-1)^2 - 2(y-1)(y-\frac{1}{2})}}{2(y-1)} \rightarrow y^2 - y + 1 - (y-1)(y-\frac{1}{2}) \rightarrow$$

مخرج غير صفري

$$\rightarrow y^2 - y + 1 - (y^2 - \frac{1}{2}y + \frac{1}{2}) = -\frac{1}{2}y^2 + \frac{3}{2}y \geq 0 \quad y^2 - y \leq 0 \quad y(y-1) \leq 0$$

$$\frac{+4-4+}{+4-4+}$$

$$R = [0, 1]$$

$$a) p_{n+1} \left| \begin{array}{c} 2 \\ 3 \end{array} \right. \quad (-\infty, 3] \xrightarrow{\sqrt{\quad}} [0, \sqrt{3}]$$

$$b) p_{n+1} \left| \begin{array}{c} 2 \\ -1 \end{array} \right. \quad [-1, +\infty) \xrightarrow{\sqrt{\quad}} [-2, +\infty)$$

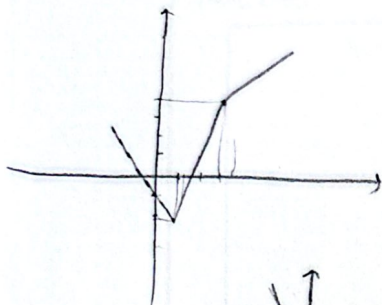
الف) $\frac{(n^2 - n + 1)}{n} \rightarrow R = R$

ب) $\frac{n^2 + 1}{n} \rightarrow R = (-\infty, -2] \cup [2, +\infty)$
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$R = [1, +\infty)$

الف) $|2n - 2| - |n - 2|$

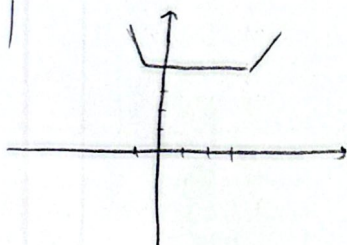
$-2n + 2 + n - 2$	$2n - 2 + n - 2$	$2n - 2 - n + 2$
$-n - 1$	$3n - 4$	n



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

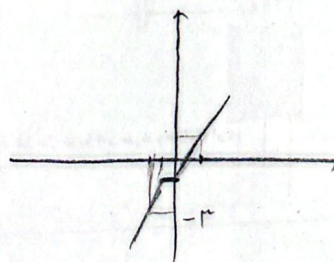
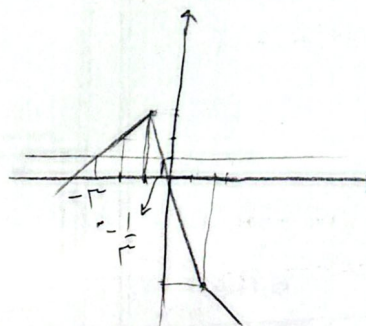
$R = [2, +\infty)$

ب) 1)



$-2n + 2 + n - 2$	$2n - 2 + n - 2$	$2n - 2 - n + 2$
$-n - 1$	$3n - 4$	n

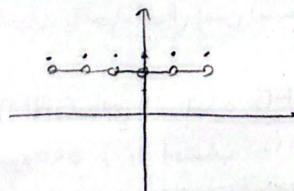
$x \in (-\infty, -2] \cup [-\frac{1}{2}, +\infty)$



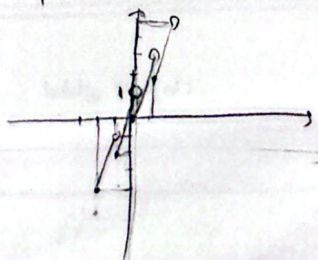
$R = R$

$R = \{2, 3\}$

الف) $y = [n] + [-n] + 2$



ب) $m - [n] = \begin{cases} m+2 & -1 \leq n < 0 \\ m+1 & 0 \leq n < 1 \\ m & 1 \leq n < 2 \\ m-1 & 2 \leq n < 3 \end{cases}$



$R = [-1, \infty)$

$$1) \text{ ان } y = \sin^2 n - \sin n + 1$$

$$\begin{pmatrix} 1 \\ -1 \\ \frac{1}{2} \end{pmatrix} \begin{matrix} 1 - 1 + 1 = 1 \\ 1 + 1 + 1 = 3 \\ \frac{1}{2} - \frac{1}{2} + 1 = \frac{3}{2} \end{matrix}$$

$$R = \left[\frac{3}{2}, 3 \right]$$

$$2) \text{ ان } y = \sin^2 n - \sin^2 n + 1$$

$$\begin{pmatrix} 1 \\ 0 \\ -\frac{1}{2} \end{pmatrix} \begin{matrix} 1 + 1 + 1 = 3 \\ \dots + 1 = 1 \\ \dots \end{matrix}$$

$$R = [1, 3]$$