

$$2) f(n) = n(n-2) + C$$

$$f(n) = n^2 - 2n + C$$

$$\frac{-b}{2a} = \frac{2}{2} = 1$$

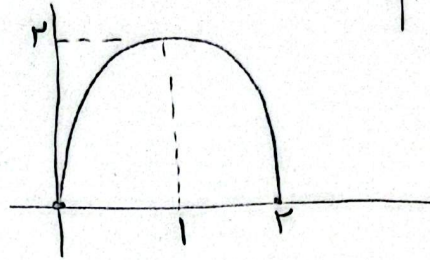
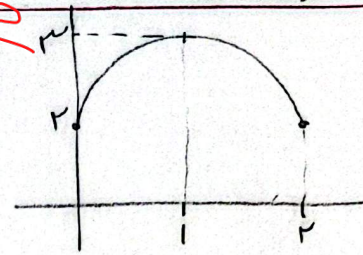
$$1) 2f(n) = 2n^2 - 4n + 2$$

2 ✓

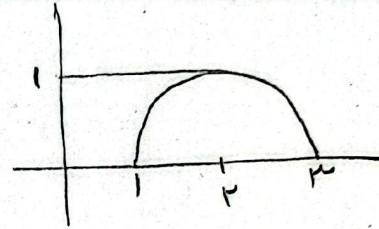
$$f(1) = 1 - 2 + C$$

$$1 = 1 - 2 + C$$

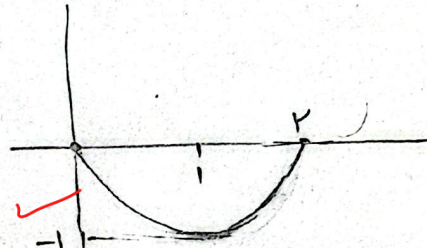
$$C = 2$$



$$2) f(n-1) = (n-1)^2 - 2(n-1) + 2$$



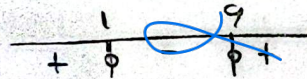
$$3) -f(n) = -n^2 + 2n - 2$$



$$(n-2)(n-2) \rightarrow \begin{array}{c} 2 \quad 2 \\ + \quad - \quad - \quad + \end{array}$$

$$2) n^2 - 4n + 4 > 0$$

$$(n-2)(n-2) > 0$$

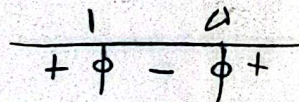


$$n = (-\infty, 2) \cup (2, +\infty)$$

$$(-\infty, 2) \cup (2, +\infty)$$

$$1) n^2 - 4n + 4 < 0$$

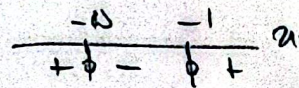
$$(n-2)(n-2) < 0$$



$$n = (2, 2)$$

$$2) n^2 + 4n + 4 > 0$$

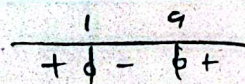
$$(n+2)(n+2) > 0$$



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

$$3) n^2 - 4n + 4 \leq 0$$

$$(n-2)(n-2) \leq 0$$



$$n = [2, 2]$$

$$\text{اند) } \frac{n^2 - 3n + 2}{n - 5} < 0$$

$$\frac{(n-1)(n-2)}{n-5} < 0$$

$$\frac{1}{-} \frac{2}{+} \frac{5}{-} \frac{+}{+} \quad n = (1, 2) \cup (5, +\infty)$$

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$$\text{ند) } \frac{n^2 - 1}{n^2 - 4n + 5} \geq 0$$

$$\frac{-1, 1 - n^2 - 1}{(n-1)(n-5)} \geq 0$$

$$\frac{-1}{+} \frac{1}{-} \frac{5}{-} \frac{+}{+} \quad n = (5, +\infty) \cup [-1, 1]$$

$$\text{اند) } \sqrt{\frac{n^2 - 1}{n^2 - n}} = y$$

$$\frac{1}{-} \frac{1}{+} \frac{0}{+}$$

$$D_f = (1, +\infty) \cup (0, 1)$$

پایین صفر مطالعه شود

$$\text{ند) } \sqrt{\frac{n^2 - 14}{n^2 - 4n + 4}} = y$$

$$\frac{(n-1)(n-2)}{n}$$

$$\frac{1}{-} \frac{2}{+} \frac{0}{+}$$

$$D_f = (2, +\infty) \cup (1, 2)$$

$$\text{اند) } y = \sqrt{4 - \sqrt{4 - n}}$$

$$4 - \sqrt{4 - n} \geq 0$$

$$n \geq -12$$

$$D_f = [-12, 4]$$

$$4 - n \geq 0$$

$$\sqrt{4 - n} \leq 4$$

$$\frac{-12}{+} \frac{4}{+}$$

$$n \leq 4$$

$$4 - n \leq 16$$

✓

$$\text{ند) } \sqrt{4 - \sqrt{4 - n}} = y$$

$$\frac{4}{+} \frac{11}{+}$$

$$4 - n \geq 0$$

$$4 - \sqrt{4 - n} \geq 0$$

$$n \leq 11$$

$$n \geq 2$$

$$\sqrt{4 - n} \leq 4$$

$$4 - n \leq 16$$

$$D_f = [2, 11]$$

$$\text{اند) } y = \sqrt{4 - 2n^2}$$

$$4 - 2n^2 \geq 0$$

$$D_f = [-\sqrt{2}, \sqrt{2}]$$

$$\text{ند) } y = \sqrt{2|n| - 9}$$

$$2|n| - 9 \geq 0$$

$$D_f: [3, +\infty) \cup (-\infty, -3]$$

$$2n^2 \leq 4$$

$$2|n| \geq 9$$

$$n^2 \leq 2$$

$$|n| \geq 3$$

$$-\sqrt{2} \leq n \leq \sqrt{2}$$

$$n \leq -3, n \geq 3$$

✓

الف) $y = \sqrt[3]{\frac{|x|+1}{|x|-3}}$ $D_f: \mathbb{R} - \{3, -3\}$

ب) $y = \sqrt[3]{\frac{\sqrt{x}+1}{\sqrt{x}-3}}$ $D_f: \mathbb{R} - \{9\}$
 ۹ و ۰ را ریشه‌ها باید تعریف شود

۱, ۷۵

الف) $\frac{\sin x}{\cos x - 1} = y$ $\cos x - 1 \neq 0$ $D_f = \mathbb{R} - \{2k\pi \pm \frac{\pi}{2} \mid k \in \mathbb{Z}\}$

ب) $\frac{\cos x + 1}{\sin x} = y$ $\sin x \neq 0$ $D_f = \mathbb{R} - \{\frac{\pi}{2} + k\pi, \frac{3\pi}{2} + k\pi \mid k \in \mathbb{Z}\}$

ج) $\cot x - 1 \neq 0$ $\cot x \neq 1$ $D_f = \mathbb{R} - \{k\pi, \frac{\pi}{4} + k\pi, \frac{5\pi}{4} + k\pi \mid k \in \mathbb{Z}\}$

د) $\sqrt{\sin^2 x - 3} \neq 0$ $\sin^2 x \neq 3$ $D_f = \mathbb{R} - \{\frac{\pi}{2} + k\pi, \frac{3\pi}{2} + k\pi \mid k \in \mathbb{Z}\}$

$|x-2| - \frac{1}{x} > 0$

$|x-2| > \frac{1}{x}$

$|x-2| > \frac{1}{x}$

$x-2 > \frac{1}{x}$ $x > \frac{1}{x-2}$

$x-2 < -\frac{1}{x}$ $x < \frac{1}{2-x}$

۱, ۵

$D_f: (\frac{1}{x}, \frac{1}{x-2})$

$D_g = (-\infty, \frac{1}{x}) \cup (\frac{1}{x-2}, +\infty)$

الف) $4 - 2|x| \geq 0$

$2|x| \leq 4$

$|x| \leq 2$

$-2 \leq x \leq 2$

$D_f: [-2, 2]$

ب) $|x| \neq 0$

$\frac{|x|}{|x|} \geq 0 \checkmark$

$D_f: \mathbb{R} - \{0\}$

۲, ۷

$$\frac{(n-1)(n^2+n+1)}{n(n-1)(n+1)} \geq 0 \rightarrow$$

-1	0	*1	
+	-	+	+

٢- الف

$$D_f = (-\infty, -1) \cup (0, +\infty) - \{1\}$$

$$\frac{(n-4)(n+4)}{(n-4)(n-1)} \geq 0 \rightarrow$$

-4	1	*4	
+	-	+	+

ب

$$D_f = (-\infty, -4] \cup (1, +\infty) - \{4\}$$