

نام و نام خانوادگی کلاس پاسخنامه تشریحی تکلیف شماره کلاس نام و نام خانوادگی

الف) $y^2 - 2x^2 = 2x - 1 \rightarrow y^2 = 2x^2 + 2x - 1 \rightarrow$ $y = \sqrt{2x^2 + 2x - 1}$ تابع نیست ✓	ب) $x = \frac{1}{2} \rightarrow \frac{1}{2}$ و $y = 0 \Rightarrow$ $y = \frac{1}{2}x + \frac{1}{2}$ تابع نیست ✓	1
2) $x + y = 2\sqrt{xy} \rightarrow x + y - 2\sqrt{xy} = 0 \Rightarrow$ $(\sqrt{x} - \sqrt{y})^2 = 0 \rightarrow \sqrt{x} = \sqrt{y} \rightarrow x = y$ ✓ تابع است	د) $xy^2 + 2x - y^3 - 2y = 0 \rightarrow xy^2 + 2x = y^3 + 2y$ $x(y^2 + 2) = y(y^2 + 2) \rightarrow x = y$ ✓ تابع است	2
الف) $ y + x^2 = 2y \Rightarrow$ $y \geq 0 \rightarrow y + x^2 = 2y \rightarrow x^2 = y$ ✓ $y < 0 \rightarrow -y + x^2 = 2y \rightarrow x^2 = 3y$ ✓ $x^2 = y \rightarrow y = x^2$ ✓	ب) $x = 0$ و $y = 1$ $[x] + 0 = 1 \rightarrow [x] = 1$ $y \in [1, 2]$ ✓ تابع نیست	3
$\begin{cases} 2x^2 - b & x > 1 \\ a + 2x & 0 < x \leq 1 \\ 2x^2 - b & x \leq -1 \end{cases} \rightarrow \begin{cases} 2x^2 - b = a + 2x \\ 1 - b = a + 2 \\ 1 - 4 = a + b \end{cases} \rightarrow \begin{cases} 12 = a + b \end{cases}$ ✓		4
$-x^2 - bx + a \geq 0 \rightarrow x^2 + bx - a \leq 0 \rightarrow \frac{b}{2} - \frac{a}{4} \leq x \leq \frac{b}{2} + \frac{a}{4}$ $a > b \rightarrow a - b = -a + b = -1$ ✓ $a + b = -b \rightarrow a = -2b \rightarrow a = 2$ ✓ $a + 2 = 2 - 1 = 1$ ✓		5
$a(x^2 + b) + c > 0 \rightarrow a = 0$ ✓ $b(x^2 + c) > 0 \rightarrow \frac{c}{b} > -x^2$ $b < 0$ $x = 2 \rightarrow 4b + c = 0 \rightarrow c = -4b$ ✓	$\begin{cases} 2a + c - 2 b \\ 0 - 2b - 2(-b) = b \end{cases}$ ✓	6

$\sqrt{\frac{2n+2}{n+b}} + a$	داده: $n+b=0$ $2+b=0 \rightarrow b=-2$ ✓ دانه: $n+b=0$	(r) (9)
الف) $y = \sqrt{n^2 - n} \rightarrow n^2 - n \geq 0$ $n(n^2 - 1) \geq 0 \rightarrow \frac{-1}{-1} + \frac{0}{0} + \frac{1}{1}$ $D_f: [-1, 0] \cup [1, +\infty)$ ✓	$\Rightarrow y = \frac{1}{\sqrt{ n -1}} \rightarrow n -1 > 0$ $n > 1$ $\rightarrow n > 1$ $n^2 < -1$ $D_f: (-\infty, -1) \cup (1, +\infty)$ ✓	(r) ✓
الف) $n \neq [n]$ $\downarrow$ $n \notin \mathbb{Z}$ $D_f: \mathbb{R} - \mathbb{Z}$ ✓ فقط اعداد صحیح مثبت و منفی باید از دامنه حذف شوند	ب) $\sqrt{n} + \sqrt{5} = 9 \rightarrow \sqrt{5} = 9 - \sqrt{n}$ $9 - \sqrt{n} \geq 0 \rightarrow 9 \geq \sqrt{n}$ $n \geq 0$, $n \leq 81$ $D_f: [0, 81]$ ✓	(15) (1)
$[2n - \frac{1}{2}] + [2n + \frac{5}{2}] > 0 \rightarrow [2n - \frac{1}{2} + 2 - 2] + [2n + \frac{5}{2}] > 0 \Rightarrow$ $2[2n + \frac{5}{2}] - 2 > 0 \rightarrow 2[2n + \frac{5}{2}] > 2 \rightarrow [2n + \frac{5}{2}] > 1 \Rightarrow$ $2n + \frac{5}{2} \geq 2 \rightarrow 2n \geq \frac{1}{2} \rightarrow n \geq \frac{1}{4}$ ✓ $D_f: [\frac{1}{4}, +\infty)$	(r) ✓	(r) ✓
$2n - a > 0 \rightarrow 2n > a \rightarrow n > \frac{a}{2}$ $1 - \log(2n - a) \geq 0 \rightarrow 1 \geq \log(2n - a) \rightarrow 10 \geq 2n - a \rightarrow \frac{10+a}{2} \geq n$ $\frac{a}{2} < n \leq \frac{10+a}{2} \rightarrow b = \frac{a}{2}$ $c = \frac{10+a}{2}$	$c - b = \frac{10+a}{2} - \frac{a}{2} = \frac{10}{2} = 5$ ✓	(r) ✓