

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

1. $y_1^3 = 2n^2 + 2n - 1$
 $y_2^3 = 2n^2 + 2n - 1$
 $y_1^3 = y_2^3 \Rightarrow y_1 = y_2$ تابع است

2. $x+y = 2\sqrt{xy}$
 $x+y - 2\sqrt{xy} = 0$
 $(\sqrt{x} - \sqrt{y})^2 = 0 \Rightarrow x=y$ تابع است

() $xy^2 + 12x = y^3 + 2y$
 بدلیل وجود y^2 و $2y$ تابع است

2.
$$\left. \begin{array}{l} n-1 \geq 2 \\ n \geq 4 \end{array} \right\} n \geq 4$$

$$\left. \begin{array}{l} n-1 \leq -2 \\ n \leq -1 \end{array} \right\} n \leq -1$$

$$\left. \begin{array}{l} 2-b = a-2 \\ 4 = a+b \end{array} \right\}$$

3. $(a-x)(b+x) = ab + ax - bx - x^2 = ab + (a-b)x - x^2$
 $\Rightarrow ab = a \Rightarrow b=1$, $a-b = b \Rightarrow a=2$

$$a+b = 3$$

4. $a(n-2)^2 = an^2 + 9n + 5 \Rightarrow a = -1 \Rightarrow b=5, c=-4$
 $-3 + 5 = \frac{-3 \times 5}{-15} = -19$

5. $|m| \neq [n]$ (الف)
 $n \in \mathbb{R} - \mathbb{Z} \Rightarrow |m| \neq [n]$ I
 $n \in \mathbb{Z}^+ \Rightarrow |m| = [n]$ II
 $n \in \mathbb{Z}^- \Rightarrow |m| \neq [n]$ III
 $I \cap II \cap III \Rightarrow D = \mathbb{R} - \mathbb{Z}^+$

$\sqrt{y} = 9 - \sqrt{n}$
 $\Rightarrow n \geq 0$ I
 $\Rightarrow 9 - \sqrt{n} \geq 0$, $9 \geq \sqrt{n}$
 $81 \geq n$ II
 $I \cap II : 0 \leq n \leq 81$

$$\frac{1}{4 + \sqrt{12} - 12} > 0$$

$$n > 0 \quad \sqrt[3]{n-1} \geq 0 \quad \text{و} \quad n \neq 1 \quad n \geq \frac{1}{r}$$

$$\log_{\sqrt[3]{n}} \sqrt[3]{n-1} \geq 1 \Rightarrow n \geq \frac{1}{r} \Rightarrow D_f = n \geq \frac{1}{r}, n \neq 1$$

$$|n| = t \quad -t^2 + t + 4 > 0 \Rightarrow (t+2)(t-4) > 0 \Rightarrow \sqrt{12} = -2 \times \sqrt{12} = \sqrt[3]{4}$$

$$\Rightarrow n = \pm 9 \quad \frac{-7}{-6} + \frac{+7}{6} \Rightarrow D_f = \frac{9}{6} \leq 9$$

$$-9 < n < 9$$

$$\frac{\sqrt[3]{n+2}}{n+b} + 9 \geq 0 \Rightarrow \frac{\sqrt[3]{n+2} + 9n + 9b}{n+b} \geq 0$$

$$\Rightarrow b = -2 \quad \text{چون دانه برابر با (2+9) است و عددی از بازه کم نشود پس}$$

$$f(n) = \begin{cases} n-1 & : n \geq \omega \quad I \Rightarrow y = \sqrt[3]{n-1} = \sqrt{n} \Rightarrow n \geq 0 \\ \sqrt[3]{n+2} & : n < \omega \Rightarrow y = \sqrt[3]{n+2} = \sqrt[3]{n+4} \end{cases}$$

$$\sqrt[3]{n+2} \geq 0 \Rightarrow n \geq -\frac{2}{r} \quad III$$

$$I \cap II \cap III : D_f : \boxed{-\frac{2}{r} \leq n}$$

$$y = \frac{\sqrt[3]{(12n^3 + 12n^2 + 4n + 1)}}{(2n+1)^4} = \frac{\sqrt[3]{(2n+1)^3}}{(2n+1)^4} = \frac{1}{2n+1}$$

$$2n+1 \neq 0 \Rightarrow n \neq -\frac{1}{2}$$

$$2n-9 \geq 0 \Rightarrow n \geq \frac{9}{2} = 4.5$$

$$1 - \log(2n-9) \geq 0$$

$$\log(2n-9) \leq 1$$

$$2n-9 \leq 10 \Rightarrow n \leq \frac{10+9}{2} = 9.5$$

$$\frac{10+9}{2} - \frac{9}{2} = 5$$