

$(x^2) \quad (-x^2) \quad (x = \pm x^2) \quad (x = \pm x^2)$
 $(1) \quad x^2 - x - 9 = (x - x^2)(x^2)$
 $x^2 - 14x^2 + x^2 = x^2 = t^2 \rightarrow t^2 - 14t + t^2 = (t - 9)(t - 4)$
 $\frac{1}{y} + \frac{1}{y} - \frac{1}{y} + \frac{1}{y} + \dots \geq 0$
 $D_f = (-\infty, -5) \cup (5, \infty) \cup (5, \infty)$

ب) $x^2 - 14x^2 + x^2 = x^2 = t^2$
 جمع ضرایب متغیر است
 جمع ضرایب متغیر با هم برابر است
 $(x-1)(x^2-x-9) = (x-1)(x-x^2)$
 $(x-1)(x-x^2) = (x-1)(x-x^2)$
 $(x-1)(x-x^2) = (x-1)(x-x^2)$
 $D_f = (-\infty, -1) \cup (1, \infty) \cup (1, \infty)$

ا) $[x] - 2 \geq 0 \rightarrow [x] \geq 2 \Rightarrow D_f: (-\infty, -2]$
 ب) $[x]^2 - 2[x] - 3 \neq 0 \rightarrow ([x] - 3)([x] + 1) = 0$
 $[x] \neq 3 \quad [x] \neq -1 \quad D_f: (-\infty, -1) \cup (1, \infty) \cup (3, \infty)$
 $x \neq [x, 5] \quad x \neq [-1, 0]$

ا) $\tan n + 1 \neq 0 \Rightarrow \tan n \neq -1 \Rightarrow n \neq k\pi - \frac{\pi}{4}$
 $\cos n \neq 0 \Rightarrow n \neq k\pi + \frac{\pi}{2}$
 $\sin n \neq 0 \Rightarrow n \neq k\pi$
 $D_f = \mathbb{R} - \{k\pi \in \mathbb{R} \mid k \in \mathbb{Z}\}$
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ب) $1 - \sin n \geq 0 \Rightarrow \sin n \leq 1 \Rightarrow \sin n \leq \frac{1}{2} \Rightarrow \frac{1}{2} \leq \sin n \leq \frac{1}{2}$
 $D_f = [2k\pi - \frac{\pi}{2}, 2k\pi + \frac{\pi}{2}] \cup [2k\pi + \pi - \frac{\pi}{2}, 2k\pi + \pi + \frac{\pi}{2}]$

ا) $n-1 > 0 \Rightarrow n > 1$
 $1 - \log n \geq 0 \Rightarrow \log n \leq 1 \Rightarrow n-1 \leq \frac{1}{2} \Rightarrow n \leq \frac{3}{2} \Rightarrow 1 < n \leq \frac{3}{2}$
 $D_f = (1, \frac{3}{2}]$

ب) $n^2 - n \geq 0 \Rightarrow n(n-1) \geq 0 \Rightarrow \frac{n}{1} + \frac{1}{n-1} \geq 0$
 $n^2 - n \geq 0 \Rightarrow n(n-1) \geq 0 \Rightarrow \frac{n}{1} + \frac{1}{n-1} \geq 0$
 $1 - \log n \neq 0 \Rightarrow \log n \neq 1 \Rightarrow n-1 \neq \frac{1}{2} \Rightarrow n \neq \frac{3}{2}$
 $D_f = (-\infty, -1) \cup (1, \infty) \cup (1, \infty)$

ا) $x^2 - n^2 \geq 0 \Rightarrow x^2 \geq n^2 \Rightarrow x \geq n \text{ or } x \leq -n$
 $x^2 - n^2 \geq 0 \Rightarrow x^2 \geq n^2 \Rightarrow x \geq n \text{ or } x \leq -n$
 $D_f = [1, \infty)$

ب) $\frac{x^2 n + 2}{x^2 n + 4} \in \mathbb{N} \Rightarrow 6 \leq 4n + 2 \leq 6 \leq 4n + 4 \Rightarrow 2 \leq 4n \leq 4 \Rightarrow n \in \{1\}$
 $D_f = \{n \mid n = \frac{x^2 n + 2}{x^2 n + 4} \in \mathbb{N}\}$

$$x^2 + y^2 - 4x + 6y + 12 = 0$$

$$x^2 - 4x + y^2 + 6y + k = 0$$

$$\Rightarrow k = 11$$

$$(\sqrt{2}x - b)^2 + (y + 2)^2 = y^2 + 6y + 9 \Rightarrow x^2 - 4x + 1 + y^2 + 6y + 9 = 0$$

$$x^2 - 4x + 1 + y^2 + 6y + 9 = 0 \Rightarrow x^2 - 4x + 1 = 0 \Rightarrow x = 2 \pm \sqrt{3} \Rightarrow t = \sqrt{2} \Rightarrow t = \sqrt{2} \Rightarrow t = \sqrt{2}$$

$$x^2 + 4x + 4 = (x+2)^2$$

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$$a > 0$$

$$a^2 + a - 2 = 0 \Rightarrow a_1 = 1, a_2 = -2$$

$$(a+2)(a-1) \Rightarrow a_1 = 1, a_2 = -2$$

$$\Rightarrow x = 1 \Rightarrow 1 + 4 = 5 = f(1)$$

$$|n+1| \geq 2 \Rightarrow n+1 \geq 2 \Rightarrow n \geq 1$$

$$n+1 \leq -2 \Rightarrow n \leq -3$$

$$-3 \leq n \leq -1$$

$$if n = -2$$

$$18 - b = a - 6$$

$$a + b = 24$$

$$x - a > 0 \xrightarrow{x=2} 2 - a > 0 \Rightarrow 2 > a$$

$$b - 2a > 0 \xrightarrow{x=2} b > 4$$

$$\frac{b}{a} \geq \frac{4}{2} \geq \frac{1}{2}$$

$$\{x \mid x^2 + 4x + 4 = 0\} \Rightarrow \{x \mid (x+2)^2 = 0\} \Rightarrow \{x \mid x = -2\}$$

$$|x-2| \neq 0 \Rightarrow x \neq 2$$

$$x+1 \geq 0 \Rightarrow x \geq -1$$

$$\begin{cases} [x] - 4 > 0 \Rightarrow [x] > 4 \Rightarrow x \geq 5 \quad I \\ 2 - [x] > 0 \Rightarrow 2 > [x] \Rightarrow x < 3 \quad II \end{cases} \Rightarrow I \cap II = \emptyset$$