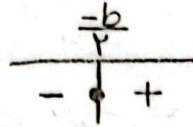


$$a - 2 = 0 \Rightarrow a = 2$$

$$2x + b \geq 0 \quad x \geq \frac{-b}{2} \quad \frac{-b}{2} = 3 \Rightarrow b = -6$$



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$$\Delta \leq 0$$

$$4 - 4(2 - m^2) \leq 0$$

$$4 - 4 + 4m^2 \leq 0$$

$$4m^2 - 4 \leq 0$$

$$4(m^2 - 1) \leq 0 \quad \frac{-1}{+} \quad \frac{1}{-} \quad [-1, 1] \Rightarrow 1 - (-1) = 2$$

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$$\left. \begin{array}{l} 4 - x^2 \geq 0 \quad x \geq 2 \quad -2 \leq x \leq 2 \end{array} \right\} -2, -1, 0, 1, 2 \Rightarrow [5]$$

$$[x] + [-x] \neq -1 \Rightarrow \mathbb{Z}$$

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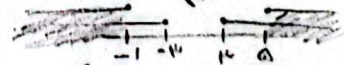
$$\text{الف) } x^2(x+3) \geq 0 \quad \frac{-3}{-} \quad \frac{0}{+} \quad \frac{+}{+} \Rightarrow D_f = [-3, +\infty)$$

$$\text{ب) } \frac{(x+1)(x-1)x^2(x-3)}{(x-1)(x^2+x+1)} \quad \frac{-1}{+} \quad \frac{0}{-} \quad \frac{1}{-} \quad \frac{3}{+} \Rightarrow D_f = (-\infty, -1] \cup \{0\} \cup [3, +\infty)$$

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$$\text{الف) } |x-2| - 3 \geq 0 \quad |x-2| \geq 3 \quad x-2 \geq 3 \quad \text{①} \quad x \geq 5$$

$$x-2 \leq -3 \quad x \leq -1$$



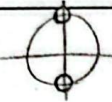
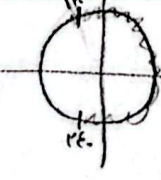
$$\text{ب) } 4 - |2-x| \geq 0 \quad 4 \geq |2-x|$$

$$-4 \leq 2-x \leq 4$$

$$-4 \leq -x \leq 2 \quad D_f = [-2, 4]$$

$$4 \geq x \geq -2$$

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الف) $1 - n/n \geq 0 \quad 1 \geq n/n \Rightarrow D_f = (-\infty, 1]$ ب) $3 - n-5 \geq 0 \quad 3 - n-5 \neq 1$ $3 \geq n-5 \quad n-5 \neq 2 \Rightarrow D_f = [2, 8] - \{3, 7\}$ $-3 \leq n-5 \leq 3 \quad n-5 \neq 2 \quad n-5 \neq -2$ $2 \leq n \leq 8 \quad n \neq 7 \quad n \neq 3$	
الف) $\cos n \neq 0$  $\mathbb{R} - \{k\pi + \frac{\pi}{2}\}$ ب) $2\cos n - 1 \neq 0 \quad \cos n \neq \frac{1}{2}$  $\mathbb{R} - \{2k\pi \pm \frac{\pi}{3}\}$	٧
الف) $r_{n+1} \neq n+3 \quad (r_{n+1})^2 \neq (n+3)^2$ $r_{n+1}^2 + 1 + r_n \neq n^2 + 9 + 2n \quad r_{n+1}^2 \neq 1 + r_n \quad (r_{n+1}^2 - r_n - 1) \neq 0$ $D_f = \mathbb{R} - \{\frac{r_n}{r_{n+1}^2}, \frac{r_n}{r_{n+1}^2}\}$ ب) $r_{n+1} \geq n+3$ $r_{n+1}^2 + 1 + r_n \geq n^2 + 9 + 2n \quad r_{n+1}^2 - r_n - 1 \geq 0 \Rightarrow r_{n+1}^2 \geq r_n + 1 \quad (n-4)(n+4) \geq 0 \quad D_f = (-\infty, -\frac{r_n}{r_{n+1}^2}] \cup [\frac{r_n}{r_{n+1}^2}, +\infty)$	٨
$r_{n-1} > 0$ $\boxed{n > \frac{1}{r}}$ $\log_a r_{n-1} > 0$ $r_{n-1} > 1$ $\boxed{n > 1}$ $\log_a \log_a (r_{n-1}) \geq 0$ $\log \frac{1}{r} \geq 0$ $-\log_r \log_a r_{n-1} \geq 0$ $r_{n-1} \leq a$ $\boxed{n \leq 3}$ $D_f = (1, 3]$	٩
الف) $2\cos n + 1 > 0$ $\boxed{\cos n > -\frac{1}{2}}$  $D_f = (2k\pi - \frac{2\pi}{3}, 2k\pi + \frac{2\pi}{3})$ ب) $\frac{n-1}{n+1} > 0$ $\log \frac{n-1}{n+1} \geq 0$ $\frac{n-1}{n+1} \geq 1 \Rightarrow \frac{n-1}{n+1} - 1 \geq 0 \Rightarrow \frac{n-1-n-1}{n+1} \geq 0 \Rightarrow \frac{-2}{n+1} \geq 0$ $n+1 \neq 0 \Rightarrow n \neq -1 \quad D_f = (-\infty, -1)$	١٠