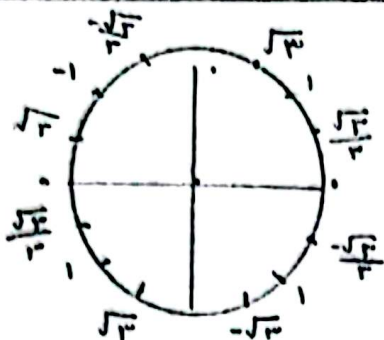




$$a) \frac{1}{4} - 1 - 2 = \frac{1}{4} - \frac{8}{4} = -\frac{7}{4}$$

$$b) 2(-\frac{\sqrt{2}}{4}) + \frac{\sqrt{2}}{4} - 2(-\frac{\sqrt{2}}{4}) = \frac{2\sqrt{2}}{4} + \frac{2\sqrt{2}}{4} = \frac{4\sqrt{2}}{4}$$

$$c) \frac{\sqrt{2}}{4} + 2(\frac{\sqrt{2}}{4}) - 2(-\frac{\sqrt{2}}{4}) = \frac{\sqrt{2}}{4} + \frac{2\sqrt{2}}{4} + \frac{2\sqrt{2}}{4} = \frac{5\sqrt{2}}{4}$$

$$d) \cos 0 + \sin \frac{\pi}{4} = 1 + 0 = 1$$

$$\begin{aligned} n=1 &\rightarrow 1+f=a \\ n=1 &\rightarrow 2+a+2=f+a \end{aligned} \left. \vphantom{\begin{aligned} n=1 &\rightarrow 1+f=a \\ n=1 &\rightarrow 2+a+2=f+a \end{aligned}} \right\} \rightarrow a=f+a \Rightarrow a=1$$

$$f(1)=a$$

$$n=-2 \rightarrow 2(-2)^2-b=1-b$$

$$n=-2 \rightarrow a+2(-2)=a-6 \left. \vphantom{n=-2 \rightarrow a+2(-2)=a-6} \right\} a-6=1-b \rightarrow a+b=1+6 \Rightarrow a+b=7$$

$$n+1 \geq 2 \rightarrow n \geq 1$$

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

$$n^3 - 4n^2 + 0 \rightarrow n^2(n-4) + 0 \rightarrow \text{و ۴، ۱، ۰ ریشه ها} \quad p = R - \{0, 4\}$$

$$b) p = R$$

$$\left. \begin{array}{l} \text{الف) } x^2 - 1 \geq 0 \rightarrow x^2 \geq 1 \rightarrow x > 1 \vee x \leq -1 \\ x - 2 \geq 0 \rightarrow x \geq 2 \end{array} \right\} D = [2, \infty)$$

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$$\text{ب) } \left. \begin{array}{l} 6 - 2m \geq 0 \rightarrow 6 \geq 2m \rightarrow 2 \geq m \\ 5m - 12 > 0 \rightarrow 5m > 12 \rightarrow m > \frac{12}{5} \end{array} \right\} D = \left(\frac{12}{5}, 2 \right]$$

$$5m - a \geq 0 \rightarrow 5m \geq a \rightarrow m \geq \frac{a}{5}$$

$$b - 2m \geq 0 \rightarrow b \geq 2m \rightarrow \frac{b}{2} \geq m$$

$$\frac{a}{5} \leq m \leq \frac{b}{2}$$

$$\frac{a}{5} = 2 \rightarrow a = 10$$

$$\frac{b}{2} = 2 \rightarrow b = 4$$

$$\frac{b}{2} = \frac{a}{5} = \frac{1}{2}$$

✓

$$\text{الف) } \frac{(x-2)(x+2)}{(x-2)(x-4)} \quad \text{ب) } x^2 - 2x \pm 2 \pm 2 \quad \begin{array}{c|cccc} x & -2 & -2 & 2 & 2 \\ \hline & + & - & - & + \end{array}$$

$$D = (-\infty, 2) \cup (2, \infty) - \{2\}$$

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$$\text{ب) } \frac{(x-2)(x-1)(x+2)}{(x-2)(x+1)(x+2)} \geq 0 \quad \begin{array}{c|ccccccc} x & -2 & -2 & -1 & 1 & 2 & 2 \\ \hline & + & - & + & - & + & - \end{array} \quad D = (-\infty, -2) \cup [-2, -1) \cup [1, 2) \cup [2, \infty)$$

$$\text{الف) } 2[m] - 4 \geq 0 \rightarrow [m] \geq 2 \rightarrow [2, \infty)$$

$$\text{ب) } 2[m] - 6 > 0 \rightarrow [m] > 3 \rightarrow [4, \infty)$$

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$$\text{الف) } x \neq 2 \quad x \leq 5 \quad D = [1, 5] - \{2\}$$

$$\text{ب) } \left. \begin{array}{l} [m] - 4 \geq 0 \rightarrow [m] \geq 4 \rightarrow [4, \infty) \\ 2 - [m] \leq 0 \rightarrow 2 < [m] \rightarrow [2, \infty) \end{array} \right\} \Rightarrow [4, \infty)$$

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