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نیم ساعده امتحان

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الف) $3m^3 - 10m^2 + 12m - 18 \div \frac{m-1}{3m^2 - 14m + 15}$

$\downarrow$

$(3m-3)(3m-5)$

$$D_f = \mathbb{R} - \left\{ \frac{3}{5}, \frac{5}{3}, 1 \right\}$$

ب) $3m^3 - m^2 - 14m - 4 \div \frac{m+1}{3m^2 - 4m - 4}$

$\downarrow$

$(3m-4)(3m+1)$

$$D_f = \mathbb{R} - \left\{ -1, 1, \frac{4}{3} \right\}$$

الف) $\sqrt{3-2m} \geq 0$

$3 \geq 2m$

$m \leq \frac{3}{2}$

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$$m - \sqrt{3-2m} \neq 0$$

$$m^2 \neq 3-2m$$

$$m(m+2) \neq 3$$

$m \neq +1, -3$

حقیقت پیدا کرد
عبارت صحت است

$$D_f = (-\infty, \frac{3}{2}] - \{1, -3\}$$

ب) $3m-2 \geq 0$

$3m \geq 2$

$m \geq \frac{2}{3}$

$$m^2 \neq 3m-2$$

$$m(m-3) \neq -2$$

$$m \neq 1, 2$$

$$D_f = [\frac{2}{3}, +\infty) - \{1, 2\}$$

الف) $\sqrt{\cos m} \neq 1$
 $\cos m \neq \frac{1}{\sqrt{}}$

$$D_f = \mathbb{R} - \left\{ \sqrt{K\pi + \frac{\pi}{\sqrt{}}}, \sqrt{K\pi + \frac{\omega\pi}{\sqrt{}}} \right\}$$

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ب) $\sqrt{\sin m} \neq -1$
 $\sin m \neq -\frac{1}{\sqrt{}}$

$$D_f = \mathbb{R} - \left\{ \sqrt{K\pi + \frac{\sqrt{\pi}}{c}}, \sqrt{K\pi + \frac{11\pi}{c}} \right\}$$

ج) $\cos \neq 0$, $\sin \neq 0$
 $\cot \neq 1$

$$D_f = \mathbb{R} - \left\{ K\pi + \frac{\pi}{c}, \frac{K\pi}{\sqrt{}} \right\}$$

د) $\sqrt{\sin^2 m} \neq \sqrt{3}$
 $\sin \neq \pm \frac{\sqrt{3}}{\sqrt{}}$

$$D_f = \mathbb{R} - \left\{ K\pi + \frac{\pi}{\sqrt{}}, K\pi - \frac{\pi}{\sqrt{}} \right\}$$

هـ) $(m-2)(m-3) \geq 0$

$$\begin{array}{c} 2 \quad 3 \\ | \quad + \quad - \quad + \end{array}$$

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$$D_f = (2, +\infty) \cup (-\infty, 3)$$

و) $(m-\omega)(m-1) < 0$

$$\begin{array}{c} 1 \quad \omega \\ | \quad + \quad - \quad + \end{array}$$

$$D_f = (1, \omega)$$

ز) $(m+1)(m+\omega) \geq 0$

$$\begin{array}{c} -\omega \quad -1 \\ | \quad + \quad - \quad + \end{array}$$

$$D_f = (-\infty, \omega] \cup [-1, +\infty)$$

$$2) (n-4)(n-1) \neq 0$$

$$\begin{array}{c} 1 \quad 4 \\ | \quad - \quad + \\ 4 \quad - \quad 4 \end{array}$$

$$D_f = [1, 4]$$

$$الف) \frac{(n-1)(n-2)}{n-4} < 0$$

$$\begin{array}{c} 1 \quad 2 \quad 4 \\ | \quad - \quad + \quad - \quad + \\ - \quad 4 \quad 2 \quad - \quad 4 \end{array}$$

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$$D_f = (-\infty, 1) \cup (2, 4)$$

$$ب) \frac{(n-1)(n+1)}{(n-1)(n-4)} > 0$$

$$\begin{array}{c} * \\ | \quad - \quad 1 \quad 4 \\ 4 \quad - \quad 4 \quad - \quad 4 \end{array}$$

$$D_f = (-\infty, -1] \cup (4, +\infty)$$

$$ج) \frac{(n-3)(n-1)}{n^3-1} \geq 0$$

$$\begin{array}{c} * \\ | \quad 1 \quad 3 \\ - \quad 3 \quad - \quad 1 \end{array}$$

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$$D_f = [3, +\infty)$$

$$د) \frac{n^2-1}{n \neq \pm 1}$$

$$D_f = \mathbb{R} - \{\pm 1\}$$

الف) $m^2 - 3m > 0$
 $m(m-3) > 0$

$$\begin{array}{c} 0 \quad 3 \\ | \quad | \\ - \quad - \quad + \end{array}$$

$$D_f = (-\infty, 0) \cup (3, +\infty)$$

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ب) $14 - m^2 > 0$

$$14 > m^2 \Rightarrow -\sqrt{14} < m < \sqrt{14}$$

~~m < \sqrt{14}~~

$$m \neq \pm \sqrt{14}$$

$$|m| > \sqrt{14}$$

$$\begin{cases} m > \sqrt{14} \\ m < -\sqrt{14} \end{cases}$$

$$D_f = (-\sqrt{14}, \sqrt{14}) - \{\pm \sqrt{14}\}$$

ج) $10 - m > 0$

$$m < 10$$

$$m \neq 9$$

$$\frac{(m-3)(m-9)}{m-3} > 0$$

$$\begin{array}{c} 3 \quad 9 \\ | \quad | \\ - \quad - \quad + \end{array}$$

$$D_f = (3, 10) - \{9\}$$

د) $\sqrt{(m-4)(m-11)} \geq 0$

$$\begin{array}{c} 4 \quad 11 \\ | \quad | \\ - \quad - \quad + \end{array}$$

$$34 - m^2 > 0$$

$$34 > m^2$$

$$-5 < m < 5$$

$$m > 0$$

$$m \neq 1$$

$$D_f = (0, 5] - \{1\}$$

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$$\frac{n(n-1)}{n(n+1)}$$

$$\begin{array}{c|ccc} & -1 & 0 & 1 \\ \hline & 1 & 0 & -1 \end{array}$$

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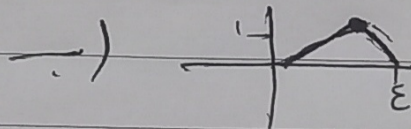
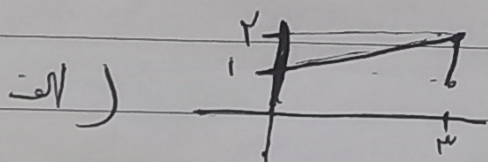
$$\begin{array}{c|ccc} & -1 & 0 & 1 \\ \hline n^2 - n & 1 & 0 & -1 \\ \hline n^2 + n & 1 & 0 & 1 \\ \hline D_f & 1 & 0 & -1 \end{array}$$

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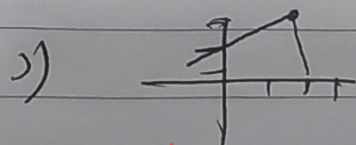
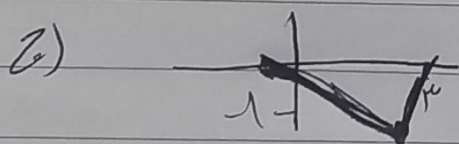
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$$\begin{array}{c|ccc} & -1 & 1 & 1 \\ \hline & -1 & 1 & -1 \end{array}$$

$$D_f = (1, 1] \cup (-1, -1]$$



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