

نام و نام خانوادگی: محمد اسلم

استخدام تشریحی تکلیف شماره 4
13, 25

کلاس دوم دبیرستان

الف) $\frac{3m^3 - 10m^2 + 11m - 10}{-5m^3 + 5m^2} \mid \frac{m-1}{5m^2 - 14m + 10}$

$$\begin{array}{r} 3m^3 - 10m^2 + 11m - 10 \\ -5m^3 + 5m^2 \\ \hline -14m^2 + 11m - 10 \\ +14m^2 - 14m \\ \hline 10m - 10 \\ -10m + 10 \\ \hline 0 \end{array}$$

$\sum (3m-10)(m-1) \Rightarrow D_f = \mathbb{R} - \left\{ \frac{10}{3}, 1 \right\}$

ب) $\frac{3m^3 - m^2 - 11m - 8}{-5m^3 - 5m^2} \mid \frac{m+1}{3m^2 - 5m - 8}$

$$\begin{array}{r} 3m^3 - m^2 - 11m - 8 \\ -5m^3 - 5m^2 \\ \hline -8m^2 - 11m - 8 \\ +8m^2 + 8m \\ \hline -3m - 8 \\ +3m + 8 \\ \hline 0 \end{array}$$

$\sum (m+1)(3m^2 - 5m - 8) \neq 0$
 $\Rightarrow D_f = \mathbb{R} - \left\{ -1, \frac{8}{3}, 4 \right\}$

الف) $\rightarrow I: 3 - 2m \geq 0$
 $m \geq \frac{3}{2}$
 $\frac{3}{2} \geq m$

II: $x - \sqrt{3-2x} \neq 0$
 $x \neq \sqrt{3-2x}$
 $m^2 \neq 3-2m \rightarrow m^2 + 2m - 3 \neq 0 \Rightarrow D_f = (-\infty, \frac{3}{2}] - \{1, 3\}$

$x = -3 \quad -3 - \sqrt{3 - (-6)} = -4x$

ب) I: $3m - 2 \geq 0$
 $m \geq \frac{2}{3}$

II: $m - \sqrt{3m-2} \neq 0$
 $m \neq \sqrt{3m-2}$
 $m^2 - 3m + 2 \neq 0 \Rightarrow (m-1)(m-2) \neq 0$

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

الف) $2 \cos \alpha \neq 0 \rightarrow \cos \alpha \neq \frac{1}{2} \rightarrow \odot \rightarrow D_f = \mathbb{R} - \left\{ 2k\pi - \frac{\pi}{3}, 2k\pi + \frac{\pi}{3} \right\}$

ب) $\sin m \neq \frac{1}{2} \rightarrow \odot \rightarrow D_f = \mathbb{R} - \left\{ 2k\pi + \frac{\pi}{6}, 2k\pi - \frac{\pi}{6} \right\}$

ج) $\begin{cases} \cot m \neq 1 \\ \sin \alpha \neq 0 \end{cases} \rightarrow \odot \rightarrow D_f = \mathbb{R} - \left\{ \frac{k\pi}{2}, k\pi + \frac{\pi}{2} \right\}$

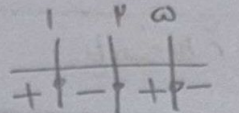
د) $\sin^2 m \neq \frac{1}{2} \rightarrow \sin m \neq \pm \frac{\sqrt{2}}{2} \rightarrow \odot \rightarrow D_f = \mathbb{R} - \left\{ k\pi + \frac{\pi}{4}, k\pi + \frac{3\pi}{4} \right\}$

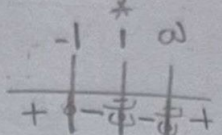
الف) $(m-2)(m-3) > 0 \rightarrow \begin{array}{c} 3 \quad 2 \\ + \quad | \quad + \\ 1 \quad 0 \end{array} \rightarrow D_f = (-\infty, 2) \cup (3, +\infty)$

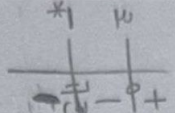
ب) $(m-1)(m-5) < 0 \rightarrow \begin{array}{c} 5 \quad 1 \\ - \quad | \quad + \\ -1 \quad -1 \end{array} \rightarrow D_f = (1, 5)$

ج) $(m+1)(m+5) \geq 0 \rightarrow \begin{array}{c} -1 \quad -5 \\ + \quad | \quad + \\ 1 \quad -1 \end{array} \rightarrow D_f = (-\infty, -5] \cup [-1, +\infty)$

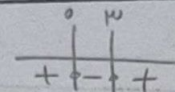
د) $(m-1)(m-4) \leq 0 \rightarrow \begin{array}{c} 1 \quad 4 \\ - \quad | \quad + \\ -1 \quad -1 \end{array} \rightarrow D_f = [1, 4]$

الف) $\frac{(x-1)(m-2)}{m-\omega} < 0 \rightarrow$  $\rightarrow D_f = (-\infty, 1) \cup (2, \omega)$

ب) $\frac{(x-1)(m+1)}{(x-1)(m-\omega)} \geq 0 \rightarrow$  $\rightarrow D_f = (-\infty, -1] \cup (\omega, +\infty)$

الف) $\frac{(x-1)(m-3)}{x^2-1} \geq 0 \rightarrow$  $\rightarrow D_f = \rightarrow [3, +\infty)$

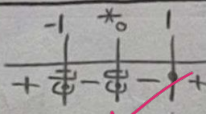
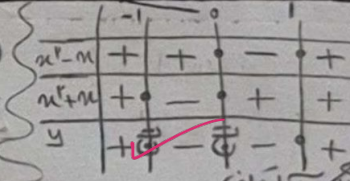
ب) $(x-1)(m+1) \neq 0 \rightarrow D_f = \mathbb{R} - \{ \pm 1 \}$

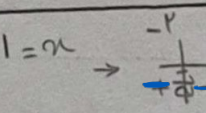
الف) $x^2 - 3x > 0 \rightarrow x(x-3) > 0 \rightarrow$  $\rightarrow D_f = (-\infty, 0) \cup (3, +\infty)$

ب) (I) $4 - x^2 > 0 \rightarrow (2 > x > -2)$
 (II) $|x| > 2$
 (III) $|x| \neq 3 \rightarrow x \neq \pm 3$
 $\rightarrow D_f = (-3, -2) \cup (-2, -1) \cup (1, 2) \cup (2, 3)$

ج) I $\frac{(x-3)(x-\varepsilon)}{x-3} > 0 \rightarrow x \neq 3$
 II $1 > x$
 III $x \neq 9$
 $\rightarrow D_f = (3, 1) - \{9\} \cup (9, +\infty)$

اشتباه بکسر بین جوابها
 $x \neq 1$
 $x > 0$
 $34 - x^2 > 0 \rightarrow 6 > x > -6$
 $\rightarrow D_f = (0, 6] \cup [7, +\infty)$

$y = \frac{x(x-1)}{x(x+1)} \rightarrow \frac{x(x+1)}{x(x+1)} \neq 0 \rightarrow$  $\rightarrow$ 

$\frac{x-f(m)}{f(m)} \geq 0 \rightarrow x = f(m) \rightarrow 3, -1 = x \rightarrow$  $\rightarrow D_f = (-\infty, -1) \cup (-1, 2) \cup [3, +\infty)$
 از 3 بعد x از 2 بایستی آید
 Op: $(-2, -1] \cup (2, 3]$

