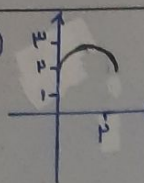
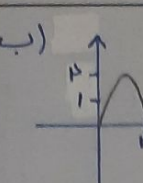
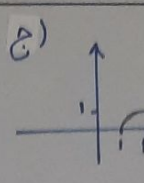
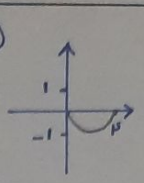


نام و نام خانوادگی: پاسخنامه تشریحی تکلیف شماره: کلاس: دهم دبیرستان:

الف) 	ب) 	ج) 	د) 
الف) $(x-2)(x-3) > 0$ $\downarrow \quad \downarrow$ $2 \quad 3$ $\begin{array}{c cc} x & 2 & 3 \\ \hline & + & - \end{array}$ $(-\infty, 2) \cup (3, +\infty)$	ب) $(x-5)(x-1) < 0$ $\downarrow \quad \downarrow$ $5 \quad 1$ $\begin{array}{c cc} x & 1 & 5 \\ \hline & + & - \end{array}$ $(1, 5)$	ج) $(x+5)(x+1) \geq 0$ $\downarrow \quad \downarrow$ $-5 \quad -1$ $\begin{array}{c cc} x & -5 & -1 \\ \hline & + & - \end{array}$ $(-\infty, -5] \cup [-1, +\infty)$	د) $(x-4)(x-1) \leq 0$ $\downarrow \quad \downarrow$ $4 \quad 1$ $\begin{array}{c cc} x & 1 & 4 \\ \hline & + & - \end{array}$ $[1, 4]$
الف) $\frac{(x-2)(x-1)}{(x-5)} < 0$ $\downarrow \quad \downarrow \quad \downarrow$ $2 \quad 1 \quad 5$ $\begin{array}{c ccc} x & 1 & 2 & 5 \\ \hline & - & + & - \end{array}$ $(-\infty, 1) \cup (2, 5)$	ب) $\frac{(x-1)(x+1)}{(x-5)(x-1)} \geq 0$ $\downarrow \quad \downarrow \quad \downarrow \quad \downarrow$ $1 \quad -1 \quad 5$ $\begin{array}{c ccc} x & -1 & 1 & 5 \\ \hline & + & - & - \end{array}$ $(-\infty, -1] \cup (5, +\infty)$		
الف) $y = \sqrt{\frac{x^3-1}{x^3-x}} \Rightarrow \frac{x^3-1}{x^3-x} \geq 0 \Rightarrow \frac{(x-1)(x^2+x+1)}{x(x-1)(x+1)} \geq 0$ $\downarrow \quad \downarrow \quad \downarrow \quad \downarrow$ $1 \quad -1 \quad 0$ $\begin{array}{c ccc} x & -1 & 0 & 1 \\ \hline & + & - & + \end{array}$ $D_f = (-\infty, -1) \cup (0, 1) \cup (1, +\infty)$	ب) $y = \sqrt{\frac{x^2-16}{x^2-5x+4}} \Rightarrow \frac{x^2-16}{x^2-5x+4} \geq 0 \Rightarrow \frac{(x-4)(x+4)}{(x-4)(x-1)} \geq 0$ $\downarrow \quad \downarrow \quad \downarrow \quad \downarrow$ $4 \quad -4 \quad 1$ $\begin{array}{c ccc} x & -4 & 1 & 4 \\ \hline & + & - & + \end{array}$ $D_f = (-\infty, -4] \cup (1, 4) \cup (4, +\infty)$		
الف) $2-x \geq 0 \Rightarrow x \leq 2$ $4-\sqrt{2-x} \geq 0 \Rightarrow 4 \geq \sqrt{2-x} \Rightarrow 16 \geq 2-x \Rightarrow x \geq -14$ $\cap \rightarrow -14 \leq x \leq 2 \quad D_f = [-14, 2]$	ب) $x-2 \geq 0 \Rightarrow x \geq 2$ $3-\sqrt{x-2} \geq 0 \Rightarrow 3 \geq \sqrt{x-2} \Rightarrow 9 \geq x-2 \Rightarrow 11 \geq x$ $\cap \rightarrow 2 \leq x \leq 11 \quad D_f = [2, 11]$		

الف) $4 - 2u^2 \geq 0 \Rightarrow 4 \geq 2u^2 \Rightarrow 2 \geq u^2 \Rightarrow -\sqrt{2} < u < \sqrt{2} \rightarrow D_f = [-\sqrt{2}, \sqrt{2}]$ ب) $3 u - 9 \geq 0 \Rightarrow 3 u \geq 9 \Rightarrow u \geq 3 \Rightarrow u \geq 3 \text{ یا } u \leq -3 \Rightarrow D_f = (-\infty, -3] \cup [3, +\infty)$	۶
الف) $D_f = \mathbb{R} - \{\pm 3\}$ ب) $u \geq 0 \Rightarrow D_f = [0, +\infty) - \{9\}$ $\sqrt{u} - 3 \neq 0 \Rightarrow \sqrt{u} \neq 3 \Rightarrow u \neq 9$	۷
الف) $P \cos u \neq 1$ $\cos u \neq \frac{1}{P}$ $D_f = \mathbb{R} - \{2K\pi - \frac{\pi}{P}, 2K\pi + \frac{\pi}{P}\}$ $P \cos u - 1 \neq 0$ ب) $P \sin u + 1 \neq 0$ $P \sin u \neq -1$ $\sin u \neq -\frac{1}{P}$ $D_f = \mathbb{R} - \{2K\pi - \frac{\pi}{P}, 2K\pi + \frac{\pi}{P}\}$ ج) $\tan u = \frac{\sin u}{\cos u}$ و $\cot u = \frac{\cos u}{\sin u} \Rightarrow \cos u, \sin u \neq 0$ $\cot u - 1 \neq 0 \Rightarrow \cot u \neq 1 \Rightarrow D_f = \mathbb{R} - \{\frac{K\pi}{P}, K\pi + \frac{\pi}{P}\}$	۸
$2 u-2 - \frac{1}{P} > 0$ $2 u-2 > \frac{1}{P}$ $u-2 > \frac{1}{2P} \rightarrow u-2 > \frac{1}{2P} \rightarrow u > \frac{1}{2P} + 2$ $\rightarrow u-2 < -\frac{1}{2P} \rightarrow u < -\frac{1}{2P} + 2 \Rightarrow D_f = (-\infty, 2 - \frac{1}{2P}) \cup (2 + \frac{1}{2P}, +\infty)$	۹
الف) $4 - 2 u \geq 0 \Rightarrow 4 \geq 2 u \Rightarrow 2 \geq u \rightarrow -2 \leq u \leq 2 \rightarrow D_f = [-2, 2]$ ب) $\frac{ u }{ 2u } \geq 0 \rightarrow D_f = \mathbb{R} - \{0\}$ این عبارت به ازای تمام اعداد مثبت و منفی، یک می شود که عددی بزرگ تر مساوی صفر است.	۱۰