

$$الف) y = \sqrt{\frac{x^2 - \varepsilon x + \varepsilon}{x^2 - 1}} \rightarrow +1$$

$$-\frac{+1}{+1} - \frac{+1}{+1} +$$

$$D_f = [+1, +\infty)$$

$$ب) y = \sqrt{\frac{x^2 - \varepsilon x + \varepsilon}{x^2 + 1}}$$

$$x^2 - 1 \neq 0$$

$$x \neq \pm 1$$

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

$$ج) y = \log(x^2 - \varepsilon x)$$

$$x^2 - \varepsilon x > 0 \Rightarrow x > \varepsilon \text{ و } x < -\varepsilon$$

$$\Rightarrow D_f = (\varepsilon, +\infty) \cup (-\infty, -\varepsilon)$$

$$د) \log \frac{x^2 - \varepsilon x + \varepsilon}{x - \varepsilon}$$

$$1 - x > 0 \text{ و } x < 1 \text{ و } x \neq 1 \Rightarrow D_f = (-\varepsilon, +\infty) \cup (-\infty, +\varepsilon) - \{1\}$$

$$D_k = (+1, -) - \{1\}$$

$$1 - x^2 > 0 \Rightarrow 1 > x^2 \Rightarrow x < \varepsilon \text{ و } x > -\varepsilon$$

$$|x| - \varepsilon > 0 \Rightarrow x > \varepsilon \text{ و } x < -\varepsilon$$

$$|x| - \varepsilon \neq 0 \Rightarrow x \neq \pm \varepsilon$$

$$D_f = (-\varepsilon, \varepsilon) \cup (\varepsilon, +\infty) \cup (-\infty, -\varepsilon) \neq \{\pm \varepsilon\}$$

$$y = \sqrt{x^2 - 11x + 11} + \log \sqrt{x^2 - x}$$

$$\sqrt{x^2 - 11x + 11} > 0 \Rightarrow x < 11 \text{ و } x > -1 \text{ و } x > 0 \text{ و } x \neq 1$$

$$D_f = (1, 11] \quad D_k = [0, 1] - \{1\}$$

$$هـ) \frac{x^2 - x}{x^2 + x} \rightarrow \frac{x(x-1)}{x(x+1)} \rightarrow \frac{0}{-1}$$

$$-\frac{-1}{+1} - \frac{+1}{+1} +$$

نقطه

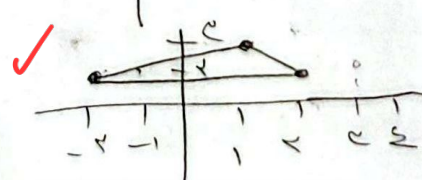
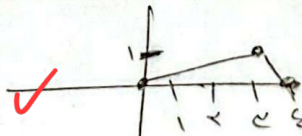
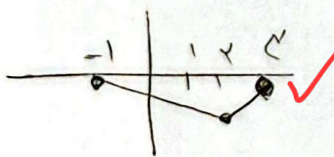
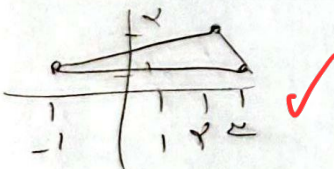
	-1	-1	0	+1
$x^2 + x$	+	+	+	+
$x^2 - x$	+	+	+	+
$f(x)$	+	+	+	+

$$و) y = \sqrt{\frac{x - f(x)}{f(x)}} \rightarrow -1$$

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

$$-\frac{-1}{+1} - \frac{+1}{+1} +$$

$$D_k = [-1, -1] \cup (1, 1]$$



15, 16

نام و نام خانوادگی کلاس شماره تکلیف شماره باسرخامه تشریحی

الف) $x+2$ $(x-1)$ $\frac{x^2-2x^2+3x-1}{x^2-2x^2+3x-1}$ $\frac{+10}{x}$ $\frac{+4}{x}$ $D_f = \mathbb{R} - \left\{ \frac{1}{2}, \frac{3}{2}, \frac{5}{2} \right\}$	ب) $x-2$ $\frac{x^2-4x+4}{x^2-4x+4}$ $\frac{-4}{x}$ $\frac{4}{x}$ $\frac{10}{x}$ $D_f = \mathbb{R} - \left\{ \frac{1}{2}, \frac{3}{2}, \frac{5}{2} \right\}$
الف) $\frac{x+1}{x-\sqrt{x^2-x}}$ $x^2-2x \geq 0 \Rightarrow x \leq \frac{1}{2}$ $x \neq 1 \Rightarrow D_f = \{x x \leq \frac{1}{2}, x \neq 1\}$	ب) $\frac{x+2}{x-\sqrt{x^2-x}}$ $x^2-x \geq 0 \Rightarrow x \geq \frac{1}{2}$ $x \neq 2 \Rightarrow D_f = \{x x \geq \frac{1}{2}, x \neq 2\}$
الف) $\frac{\sin x}{2\cos x - 1}$ $2\cos x - 1 \neq 0 \Rightarrow \cos x \neq \frac{1}{2}$ $D_f = \mathbb{R} - \left\{ \frac{\pi}{3}, \frac{5\pi}{3} \right\}$	ب) $\frac{\cos x + 1}{2\sin x + 1}$ $2\sin x + 1 \neq 0 \Rightarrow \sin x \neq -\frac{1}{2}$ $D_f = \mathbb{R} - \left\{ \frac{7\pi}{6}, \frac{11\pi}{6} \right\}$
الف) $x^2 - 4x + 4 > 0$ $(x-2)^2 > 0$ $D_f = (-\infty, 2) \cup (2, +\infty)$	ب) $x^2 - 4x + 4 < 0$ $(x-2)^2 < 0$ $D_f = \{2\}$
الف) $\frac{x^2-4x+4}{x-2}$ $\frac{(x-2)^2}{x-2} = x-2$ $D_f = \mathbb{R} - \{2\}$	ب) $\frac{x^2-1}{x^2-4x+4}$ $\frac{(x-1)(x+1)}{(x-2)^2}$ $D_f = \mathbb{R} - \{2\}$