

نام و نام خانوادگی: ..... آیدین ..... ریاضیات ..... کلاس: ..... شماره: ۱۰ ..... تشریحی تکلیف شماره: ۱۰

$\left. \begin{matrix} y^2 - x = 2x^2 \\ y^2 - x = 2x^2 \end{matrix} \right\} \Rightarrow y^2 = y^2 = y_1 \cdot y_2$  تابع است

$|y| + x^2 = n + 2 \xrightarrow{x=1} |y| + 1 = 1 + 2 \quad |y| = 2 \quad y = \pm 2$  تابع نیست

$\sqrt{x-2} + |y-2| = 0 \xrightarrow{x=4} |y-2| = 0 \quad y = \pm 2$  تابع نیست

$x = \cos y$   $\frac{2}{\pi} \leq y \leq \frac{3}{2}$  تابع است

$y = \frac{x+4}{x^2-4x} \quad x^2-4x \neq 0 \quad x(x-4) \neq 0$   
 $x \neq 0 \quad x-4 \neq 0 \quad x \neq 4$   
 $R = \{0, 4\}$

$y = \frac{x+4}{x^2-4x+4} \Rightarrow \Delta = b^2-4ac \Rightarrow 1 - (4 \cdot 1 \cdot 4) = -15$   $\Delta < 0$   $\Rightarrow$  دایره حقیقی ندارد  
 صفر نمی شود  $\mathbb{R}$

$y = \frac{x+4}{x^2+4x+4} \Rightarrow \Delta = b^2-4ac \Rightarrow 1 - (4 \cdot 1 \cdot 4) = -15$   $\Delta < 0$   $\Rightarrow$  دایره حقیقی ندارد  $\mathbb{R}$

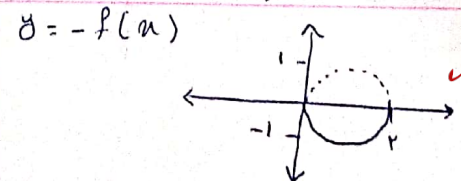
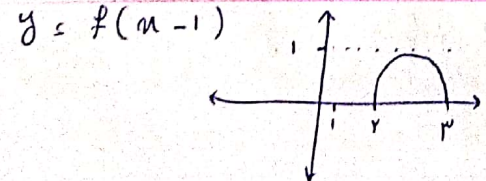
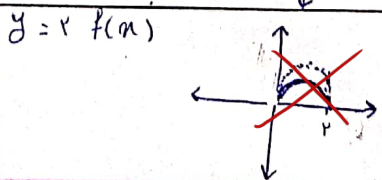
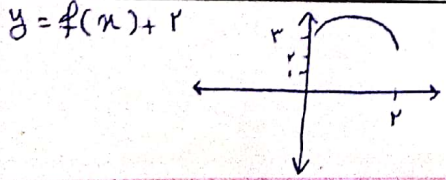
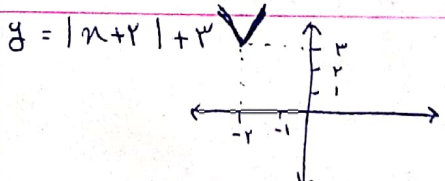
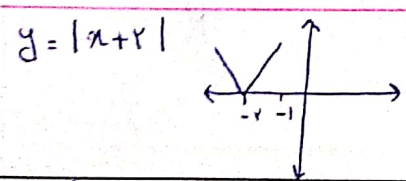
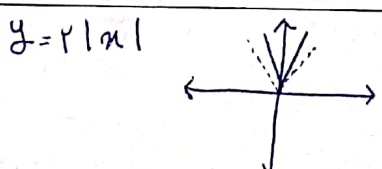
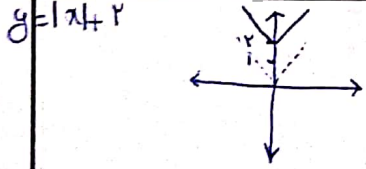
$y = \frac{x+4}{x^2-4x} = \frac{x+4}{(x^2-2x)(x+2)} = 0 \quad x(x-2) \neq 0 \quad x \neq 0, 2$   
 $R = \{0, 2, -2\}$

$y = \sqrt{4-x} + \sqrt{x-2} \quad 4-x \geq 0 \quad x-2 \geq 0$   
 $x \leq 4 \quad x \geq 2$   
 $x \in [2, 4]$

$y = \frac{x+1}{x^2+1} \quad x^2+1 \geq 1 \quad x^2 \geq 0$   
 $[0, +\infty)$

$y = \frac{\sqrt{x-2}}{x-4} \quad x-2 \geq 0 \quad x-4 > 0$   
 $x \geq 2 \quad x > 4$   
 $x > 4$

$y = \frac{2x+3}{|x|+x^2} \quad |x|+x^2 > 0$   
 $\mathbb{R}$



$$y = \frac{(x-r)(x-r)(x-r)}{(x-r)(x-r)(x-r)} \rightarrow \text{Sign chart: } - \quad + \quad - \quad + \quad \text{Intervals: } [r, r] \cup [r, +\infty)$$

$$y = \frac{(x-r)(x-r)(x-r)}{(x-r)(x-r)(x-r)} \rightarrow \text{Sign chart: } + \quad - \quad - \quad + \quad \text{Intervals: } [r, -\infty) \cup [r, +\infty)$$

$$y = \frac{(x-r)(x-r)}{(x-r)} \rightarrow \text{Sign chart: } - \quad + \quad - \quad + \quad \text{Intervals: } [r, r] \cup [r, +\infty)$$

$$y = \frac{(x-r)(x-r)}{(x-r)(x-r)} \rightarrow \text{Sign chart: } + \quad - \quad - \quad + \quad \text{Intervals: } (-\infty, r] \cup [r, +\infty)$$

$$y = \frac{x^r - rx + r}{x-r} = \frac{(x-1)(x^r + x - r)}{x-r} \rightarrow \text{Sign chart: } - \quad + \quad - \quad + \quad \text{Intervals: } [1, r] \cup (r, +\infty)$$

$$y = \frac{x^r - rx + r}{x^r - rx + r} = \frac{(x-1)(x-r)}{(x-1)(x-r)} \rightarrow \text{Sign chart: } + \quad + \quad - \quad + \quad \text{Intervals: } (-\infty, 1) \cup (1, r] \cup (r, +\infty)$$

$$y = \frac{x^r - x^r}{x^r + x + r} = \frac{x^r(x^r - 1)}{x^r + x + r} \rightarrow \text{Sign chart: } - \quad + \quad - \quad + \quad \text{Intervals: } (-\infty, -1] \cup [1, +\infty)$$

$$y = \frac{x^r + rx + r}{x^r + rx + r} \rightarrow \Delta = b^2 - 4ac \Rightarrow 9 - (4 \times 4 \times 1) = -7 < 0 \quad \text{Intervals: } \mathbb{R}$$

$$y = \sqrt{\frac{x^r - 1}{x^r - x}} \rightarrow \text{Sign chart: } \text{Intervals: } \mathbb{R} - \{1, 0\}$$

$$y = \sqrt{\frac{x^r - 1}{x^r - 0x + r}} = \sqrt{\frac{(x-r)(x+r)}{(x-1)(x-r)}} \rightarrow \text{Sign chart: } \text{Intervals: } \mathbb{R} - \{1, r\}$$