

نام و نام خانوادگی: پاسخنامه تشریحی تکلیف شماره کلاس:
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$$f(x) = \sqrt{(x-1)(x^2+ax+b)} \quad D_f = [-1, +\infty)$$

$$a=2 \leadsto f(x) = \sqrt{x(x+2)} \rightarrow \frac{2}{-1+}$$

$$4+b=0 \Rightarrow b=-4$$

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$$f(x) = \sqrt{x^2 + 2x + 2 - m^2} \quad D_f = \mathbb{R}$$

$$x^2 + 2x + 2 - m^2 \geq 0$$

$$1 \leq x - m^2$$

$$m^2 \leq 1 \Rightarrow -1 \leq m \leq 1$$

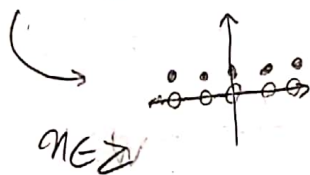
$$1 - (-1) = 2$$

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$$f(x) = \frac{\sqrt{4-x^2}}{[x]+[-x]+1}$$

$$4-x^2 \geq 0 \Rightarrow -2 \leq x \leq 2$$

$$D_f = \{-2, -1, 0, 1, 2\}$$



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$$y = \sqrt{x^2 + 2x}$$

$$x^2 + 2x \geq 0$$

$$\frac{-2}{-1+} \quad \frac{0^*}{+1+}$$

$$D_f = [-2, +\infty)$$

$$y = \frac{\sqrt{(x^2-1)(x^2-2x^2)}}{x^2-1}$$

$$\frac{-1}{+1-} \quad \frac{0^*}{-1-} \quad \frac{1}{+1+}$$

$$D_f = (-\infty, -1] \cup \{0\} \cup [1, +\infty)$$

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$$a) y = \sqrt{|x-1|-3}$$

$$x \geq 2 \rightarrow \sqrt{x-4} \rightarrow \frac{0}{-1+} \leadsto x \geq 4$$

$$x \leq 1 \rightarrow \sqrt{-x-1} \rightarrow \frac{-1}{+1-} \leadsto x \leq -1$$

$$\frac{0}{-1+} \leadsto x \geq 4$$

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

$$b) y = \sqrt{4-x^2}$$

$$x \geq 2 \rightarrow \sqrt{4-x} \leadsto x \geq 4$$

$$x \leq -2 \rightarrow \sqrt{4+x} \leadsto x \leq -4$$

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

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$\omega) y = \sqrt{1 - q n }$ $\begin{aligned} n > 0 &\rightarrow \sqrt{1 - n^2} \rightarrow \frac{1}{1+n} \rightarrow \\ n < 0 &\rightarrow \sqrt{1 + n^2} \rightarrow \text{هنا، فقط} \end{aligned} \left. \vphantom{\begin{aligned} n > 0 \\ n < 0 \end{aligned}} \right\} D_f = (-\infty, 1]$	٤
$\rightarrow) y = \frac{1}{ c - n - \delta - 1 }$ $\begin{aligned} n > 0 &\rightarrow -n + \delta \rightarrow \frac{\delta}{1+n} \\ n < 0 &\rightarrow +n - \delta \rightarrow \frac{\delta}{-1+n} \end{aligned} \left. \vphantom{\begin{aligned} n > 0 \\ n < 0 \end{aligned}} \right\} D_f = (c, \delta)$	٥
$\omega) y = \frac{\sin^2 n - 1}{\cos n}$ $\cos n \neq 0 \rightarrow D_f = \mathbb{R} - \{k\pi\}$	٧
$\rightarrow) y = \frac{\cos n}{r \cos n - 1}$ $\cos n \neq \frac{1}{r} \Rightarrow D_f = \mathbb{R} - \left\{rk\pi + \frac{\pi}{r}, rk\pi - \frac{\pi}{r}\right\}$	٨
$\omega) y = \frac{n+c}{ r(n+1) - n+c }$ $\begin{aligned} n > c &\rightarrow \frac{n+c}{n-r} \rightarrow n = r \times \\ -c < n < r &\rightarrow \frac{n+c}{c(n+r)} \rightarrow n = -\frac{c}{r} \\ n < -r &\rightarrow \frac{n+c}{r-n} \rightarrow n = r \end{aligned} \left. \vphantom{\begin{aligned} n > c \\ -c < n < r \\ n < -r \end{aligned}} \right\} D_f = (\mathbb{R} - \{r\})$ $\rightarrow) y = \sqrt{ r(n+1) - n+c }$ $\begin{aligned} r(n+1) > n+c \\ \Leftrightarrow (r+1)n + r > n + c &\Rightarrow cn^2 - \frac{r}{r+1}n - \frac{r}{r+1} > 0 \end{aligned}$ $D_f = (-\infty, -\frac{r}{c}) \cup [\frac{r}{c}, +\infty)$	٩
$f(n) = \sqrt{\log_{\frac{1}{10}} \log_{\frac{1}{10}} (r(n-1))}$ $\begin{aligned} r(n-1) > 0 &\Rightarrow n > \frac{1}{r} \\ \log_{\frac{1}{10}} (r(n-1)) > 0 &\Rightarrow r(n-1) > 1 \Rightarrow n > 1 + \frac{1}{r} \\ \log_{\frac{1}{10}} > 0 &\Rightarrow \log_{\frac{1}{10}} (r(n-1)) > 1 \Rightarrow r(n-1) > 10 \Rightarrow n > \frac{11}{r} \end{aligned} \left. \vphantom{\begin{aligned} r(n-1) > 0 \\ \log_{\frac{1}{10}} (r(n-1)) > 0 \\ \log_{\frac{1}{10}} > 0 \end{aligned}} \right\} D_f = [\frac{11}{r}, +\infty)$	٩
$y = \log(r \cos n + 1)$ $r \cos n + 1 > 0 \Rightarrow \cos n > -\frac{1}{r} \quad D_f = \mathbb{R} - \left[rk\pi - \frac{r\pi}{r}, rk\pi - \frac{\pi}{r} \right]$	١٠
$y = \sqrt{\log \frac{n-1}{n+1}}$ $\begin{aligned} \frac{n-1}{n+1} > 0 &\rightarrow \frac{-1}{1+n} \\ \log \frac{n-1}{n+1} > 0 &\Rightarrow \frac{n-1}{n+1} > 1 \Rightarrow \frac{n-1}{n+1} > 0 \end{aligned} \left. \vphantom{\begin{aligned} \frac{n-1}{n+1} > 0 \\ \log \frac{n-1}{n+1} > 0 \end{aligned}} \right\} D_f = (-\infty, -1)$	١٠