

۲. آفرین های نوشتاری

بازدهم تجربی

تعلیم ستاره

نام و نام خانوادگی

۱- $f(x) = \sqrt{(a-r)x^2 + ax + b} \quad [r, +\infty) \quad (a-r)x^2 + ax + b \geq 0$

$a-r=0 \rightarrow a=r \xrightarrow{\text{در } x=r} \Rightarrow rx+b \geq 0 \rightarrow r+b \geq 0$
 $x=r \Rightarrow b = -4$

۲- $f(x) = \sqrt{x^2 + rx + r - m^2} \quad D \subset \mathbb{R} \quad 1 - (-1) = |r|$

$\Delta \leq 0 \rightarrow r - r^2 - 4(r - m^2) \leq 0 \Rightarrow r - 1 + 4m^2 \rightarrow r(m^2 - 1) \leq 0 \Rightarrow -1 \leq m \leq 1$

۳- $f(x) = \sqrt{r - x^2} \Rightarrow r - x^2 \geq 0 \rightarrow x \leq \sqrt{r} \rightarrow -\sqrt{r} \leq x \leq \sqrt{r}$

$[x] + [-x] + 1 \Rightarrow \neq 0$

$D = \mathbb{Z}$

$1 \wedge r \rightarrow -\sqrt{r} \leq x \leq \sqrt{r} \Rightarrow \{-\sqrt{r}, -1, 0, 1, \sqrt{r}\} \Rightarrow [2, \infty)$

۴- الف) $y = \sqrt{x^6 + rx^4}$ $x^4 + rx^2 \geq 0 \rightarrow x^2(x^2 + r) \geq 0$ $D_f \subset [-\infty, +\infty)$

ب) $y = \sqrt{\frac{(x^2-1)(x^6-rx^4)}{x^6-1}}$ $\Rightarrow \frac{(x-1)(x+1)x^2(x^2-r)}{(x-1)(x^2+x+1)}$ $\xrightarrow{+0, 1, \infty}$
 $D_f \subset (-\infty, -1] \cup \{0\} \cup [r, +\infty)$

۵- الف) $y = \sqrt{|x-r|-c}$ $|x-r| \geq c$ $x-r \geq c \rightarrow x \geq r+c$ $x-r \leq -c \rightarrow x \leq r-c$ $D_f \subset (-\infty, r-c] \cup [r+c, +\infty)$

ب) $y = \sqrt{r - |r-x|}$ $r \geq |r-x| \rightarrow -r \leq r-x \leq r \rightarrow -4 \leq -x \leq 4 \rightarrow 4 \geq x \geq -4$

$D_f \subset [-4, 4]$

4- حل) $y = \sqrt{1-x|x|}$ $\oplus x \rightarrow \pm i \rightarrow 1-120V$
 $\ominus \checkmark$
 $\odot \checkmark$ $D_f = (-\infty, 1]$

ب) $y = \frac{1}{\sqrt{r-|x-a|}-1}$ 1) $r-|x-a| \geq 0 \rightarrow r \geq |x-a| \rightarrow -r \leq x-a \leq r$
 $(r \leq x \leq r)$

2) $\sqrt{r-|x-a|}-1 \neq 0$

$x \neq r, v \leftarrow |x-a| \neq r \leftarrow \sqrt{r-|x-a|} \neq 1$ $D_f = [r, \infty) - \{r, v\}$
 $[r, r) \cup (r, v) \cup (v, \infty)$

5- حل) $y = \frac{\sin x - 1}{\cos x}$ $\cos x \neq 0$ $D_f = \mathbb{R} - \{k\pi + \frac{\pi}{2}\}$

ب) $y = \frac{\cos x}{r \cos x - 1}$ $r \cos x - 1 \neq 0 \rightarrow \cos x \neq \frac{1}{r}$ $D_f = \mathbb{R} - \{k\pi + \frac{\pi}{r}, k\pi - \frac{\pi}{r}\}$

6- حل) $\frac{x+r}{|x+1|-|x+r|} \rightarrow \neq 0$ $|x+1| \neq |x+r| \xrightarrow{\text{مربع}}$
 $x^2+1+rx \neq x^2+9+4x$

$rx^2+rx-8 \neq 0 \rightarrow (x-r)(rx+8) \neq 0$

$D_f = \mathbb{R} - \{-\frac{8}{r}, r\}$ $x \neq r, -\frac{8}{r}$

ب) $y = \sqrt{|x+1|-|x+r|}$ $|x+1| \geq |x+r| \xrightarrow{\text{مربع}}$
 $|x+1|^2 - (x+r)^2 \geq 0 \rightarrow rx^2+rx-8 \geq 0 \rightarrow (x-r)(rx+8) \geq 0$

$D_f = (-\infty, -\frac{8}{r}] \cup [r, \infty)$



Mo Tu We Th Fr Sa Su



9- $f(x) = \sqrt{\log_a^{(x-1)} \log_a x}$

$\log_a^{(x-1)} \log_a x \geq 0 \Rightarrow 0 < \log_a x \leq 1$

$x-1 \leq 0 \Rightarrow x \leq 1$

$x > 1$

$1 < x \leq e$

1) $x-1 > 0 \Rightarrow x > 1$

$\frac{0}{1} \quad 1 \quad e$

$Df \subset (1, e]$

10- (ii) $y = \log(r \cos x + 1)$

$r \cos x + 1 > 0 \Rightarrow \cos x > -\frac{1}{r}$

$Df \subset \left(rkr - \frac{r\pi}{r}, rkr + \frac{r\pi}{r} \right)$

11) $y = \sqrt{\log \frac{x-1}{x+1}}$

$\frac{x-1}{x+1} \geq 0 \Rightarrow x \neq \pm 1$

$x > 1$

$x < -1$

$\log \left(\frac{x-1}{x+1} \right) \geq 0 \Rightarrow \frac{x-1}{x+1} \geq 1 \Rightarrow \frac{x-1-x-1}{x+1} \geq 0 \Rightarrow \frac{-2}{x+1} \geq 0 \Rightarrow x+1 < 0$

$x < -1$

$Df \subset (-\infty, -1)$