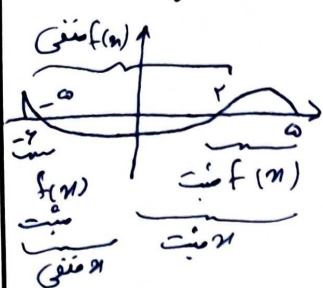


۲۰۰۰

مثبت $x_1 \rightarrow$ عزیمت یا سفر: حالت اول $\rightarrow x_1 f(x) > 0$ ؟ $y = \sqrt{x f(x)}$ دامنه



مردوفنی یا منور = حالت دوم
ست پیم عمل ها → منفی = n
[۵-۰] باز منفی = $f(x)$
لا باید زیر محور باشد
مواب

$f(x)$ منحنی
 به پایین باقی می‌ماند
 $f = [-5, 0] \cup [2, 5]$

1

$$y = \sqrt{\frac{-21}{f(x)}}$$

$\frac{-a}{f(a)} > 0$ $\rightarrow$ حالت اول
 $\rightarrow$ مسترات $\rightarrow$ مثبت $\rightarrow$ $f(x) =$ منحنی $\rightarrow$ $(0, 2)$
 $\rightarrow$ دوز ریشه ها $\rightarrow$ $[0, 2]$



(۳) $\rightarrow$ نقطه ریسمان $\rightarrow$ $[0, 1]$ $\rightarrow$ میت $\rightarrow$ $f(u) =$ مقی $\rightarrow$ $\eta =$ حالت دوم
 ۱) $f = (-3, 0) \cup (0, 2)$

$$\begin{array}{ccccccc} -4 & -3 & 0 & 2 & 5 \\ \hline \cancel{0} & + \cancel{0} & - \cancel{0} & - \cancel{0} & + \cancel{0} & \end{array}$$
 (Note: The original image has a handwritten note: $\{-2, 1, 1\} = \{3\}$ next to the 5 in the array.)

✓ P

2

$$\text{If } f(x) - rf(r) = x^r - rx + r$$

$$f(-r) = 9$$

بایکدیگر $n=r \rightarrow f(r) - r f(r) = r - r + r^2 \rightarrow f(n) + r = n^r - r n + r^2 \Rightarrow f(n) = n^r - r n$
 $- f(r) \leq r \rightarrow f(r) \leq -r$

→ کابلڈ ای $n = -2 \rightarrow f(-2) = 4 + 4 = \boxed{10}$

① ✓

3

$$f(n) = \begin{cases} n - \sqrt{n} & n > r \\ r & n \leq r \end{cases}$$

بواب $\rightarrow 7+259$

$$f(f(0)) + f(f(1)) = ?$$

$$f(\theta) \rightarrow n \gamma^r \rightarrow \omega - \sqrt{\omega^2 + s} \rightarrow r$$

$$f(\underbrace{f(\omega)}_r) \rightarrow n(r \rightarrow r \times r + r = v)$$

$$f(1) \rightarrow n \leq r \rightarrow r \times 1 + r = 0$$

$$f(\underbrace{f(1)}_{\omega}) \rightarrow n \rightarrow \omega - \underbrace{\omega + 1}_n = 1$$

② ✓

f

$$f(n) = an^r - bn + r$$

$$f(n-1) - f(n) = 4n + 5$$

$$a - b \leq ?$$

$$f(n-1) \rightarrow a(n-1)^r - b(n-1) + r = an^r + a - ran - bn + b + r$$

$$f(n-1) - f(n) \rightarrow \cancel{an^k} + a - \cancel{an^k} - \cancel{bn^k} + \cancel{bn^k} - a$$

$$\rightarrow -7a + a + b = 9n + r$$

$$-r a \leq y \rightarrow a \leq -r$$

$$a+b=r$$

$$-r + b = r \rightarrow b = 4$$

Q ✓

$$a - b = -r - a = \underline{\underline{-1}}$$

6

$$f(n) = n^r - rn + 1$$

$$rf(r) + f(-1)$$

$$f'(r)$$

$$\left. \begin{aligned} rf(r) &= r(9 - r \times r + 1) = r \\ f(-1) &= (-1)^r - r(-1) + 1 = 0 \\ f'(r) &= (r - 4 + 1)^r = (-1)^{r-1} \end{aligned} \right\} \rightarrow \frac{r+0}{1} = \boxed{r} \quad \textcircled{D} \checkmark$$

$$f(n) = \begin{cases} rn+1 & n \geq r \\ n^r & n < r \end{cases}$$

$$\frac{rf(r) - rf(-r)}{f(r)} = ?$$

$$\left. \begin{aligned} rf(r) &\rightarrow r(r(r)+1) = r \times 1r = r^2 \\ -rf(-r) &\rightarrow -r(-r)^r = -r \times r = -r \\ f(r) &\rightarrow r \times r + 1 = r^2 + 1 \end{aligned} \right\} \rightarrow \frac{r^2 - r}{r^2 + 1} = \boxed{\frac{r-1}{r+1}} \quad \textcircled{D} \checkmark$$

$$f = \{(rg), (rg), (rg), (rg)\}$$

$$\frac{f(f(r)) - f(f(r))}{f(1) - r}$$

$$\left. \begin{aligned} f(r) = 1 &\rightarrow f(1) = r \\ f(r) = r &\rightarrow f(r) = r \\ f(1) = r &\rightarrow \text{مكرر} = r \end{aligned} \right\} \frac{r-r}{r} = \boxed{0} \quad \textcircled{D} \checkmark$$

$$f(n) = \frac{n^r + rn + 9}{n^r + rn + 9}$$

$$f(f(\sqrt{r}-r)) = 9$$

$$f(\sqrt{r}-r) \rightarrow (\sqrt{r}-r)^r + r(\sqrt{r}-r) + 9 = \frac{r+r-\sqrt{r}+\sqrt{r}-1+9}{r+r-\sqrt{r}+\sqrt{r}-1+9} = 1 \rightarrow \boxed{r} \quad \textcircled{D} \checkmark$$

$$f(r) = \frac{r+1+9}{r+1+9} = \boxed{\frac{r+1}{r+10}}$$

$$f(n) = n^r + \frac{1}{n^r}$$

$$(f(\sqrt{n}))^r - f(n) = ? \rightarrow \left(n^r + \frac{1}{n^r} \right)^r + r - n^r - \frac{1}{n^r} = \boxed{r} \quad \textcircled{D} \checkmark$$

$$f(\sqrt{n}) = n + \frac{1}{n}$$

$$(f(\sqrt{n}))^r = \left(n + \frac{1}{n} \right)^r = n^r + \frac{1}{n^r} + r$$