

15,5

حل المسألة

1)

الف (19, x + 2y), (2x - y, -2)

-2 = 2y + x a = 2x - y → 2x - 2y = 17
2x + 2y = -2 ⇒ x + y = -1

(2)

$\frac{x}{y} = \frac{-2}{-1} = 2$

~~9. $2x - 2y = 17$
 $2x + 2y = -2$
→ $4y = -19$
→ $y = -\frac{19}{4}$
→ $x = -2 - y = -2 + \frac{19}{4} = \frac{15}{4}$~~

ب) (-1, -3), ($\frac{1}{x} - \frac{1}{y}$), ($\frac{a}{x} - \frac{y}{y}$)

-1 = $\frac{1}{x} - \frac{1}{y}$ → $\frac{y-x}{xy} = -1$ → -xy = y - x → -xy + y = -x

$\frac{a}{x} - \frac{y}{y} = -x - \frac{ay - yx}{xy} = -x - \frac{ay - yx}{xy}$ (2)

(1) · (2) → ay - yx = xy - yx

ay = ax
y = x

$\frac{x}{y} = \frac{x}{x} = 1$

2)

f(a) = 2a = -4

f(a) + 2f(2) = 2f(1)

f(2) = b

-4 + 2b = -2

⇒ b = 0

f(1) = a + 1 → a + 1 = -2
a = -3

ج) f({(-1, m² - 3m), (3, a)}, (-1, -2), (m+1, 4), (2, 2), (m² + 2, 2m+1)}

-2 = m² - 3m

m² - 3m + 2 = 0

(m-2)(m-1) = 0 → m = 2 → (3, 2) ✓, (3, a) ×

m = 1 → (2, 4), (2, 2) ×

~~h = 2~~

صحيح فقط

۲۱

الف) تابع نیست ✓

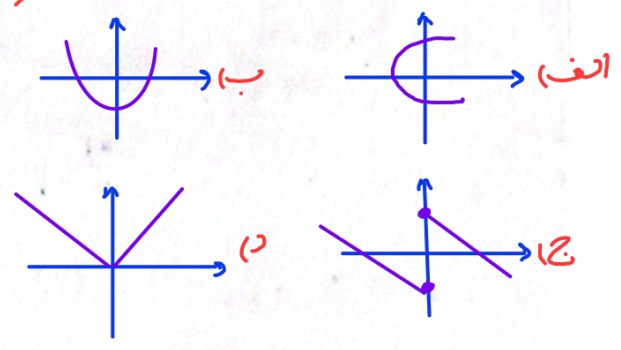
(۱)

ب) تابع است ✓

راحتل به!

ج) تابع نیست ✓

د) تابع است ✓



۳۱

الف) $y = -\sqrt{x+1}$
 $y_1 = -\sqrt{x+1}$
 $y_2 = -\sqrt{x+1}$
 $y_1 = y_2$ ✓

(۲)

ب) $x = \frac{y}{\sqrt{1-y^2}}$

$(x, y_1) \rightarrow \frac{y_1}{\sqrt{1-y_1^2}} = x$
 $(x, y_2) \rightarrow \frac{y_2}{\sqrt{1-y_2^2}} = x$
 $\Rightarrow \frac{y_1}{\sqrt{1-y_1^2}} = \frac{y_2}{\sqrt{1-y_2^2}}$
 $\Rightarrow \frac{y_1^2}{1-y_1^2} = \frac{y_2^2}{1-y_2^2}$

حقیقا با هم برابر تابع است دایره در دو نیمکره داریم بررسی شود.

۶۱

الف) $x = t^3$ $y = t^3$ تابع نیست ✓

(۱)

ب)

طریق $y^3 + 3y^2 + 3y + 1 = -x^3 - x + 1$

$(y+1)^3 = -x^3 - x + 1$

$y+1 = \sqrt{-x^3 - x + 1}$

$y = \sqrt{-x^3 - x + 1} - 1$ تابع هست!

v)

$$f(x) = \frac{x^r + \varepsilon x + a}{x^r + \varepsilon x + r} = \frac{x + \varepsilon x + \varepsilon + 1}{x + \varepsilon x + \varepsilon + r} = \frac{(x+r)^r + 1}{(x+r)^r + r}$$

(r)

$$e \quad f(\sqrt{r} - r) = \frac{(\sqrt{r})^r + 1}{(\sqrt{r})^r + r} = \frac{\varepsilon}{r} = \frac{r}{r} \checkmark$$

~~AB~~

~~$(-1, \varepsilon) \frac{b}{r} + r - 1 + a = 0$~~
 ~~$a = -11$~~

~~$(-1, \varepsilon) \frac{b}{r} - \varepsilon = -1 \quad a + b = -1 + \dots + r + b$~~
 ~~$\Rightarrow b = -1r$~~

~~$y = rx + 1$~~
 ~~$y = x^r = rx - 1 \varepsilon$~~

? ~~...~~

~~$y = y$~~
 ~~$rx + 1 = x^r = rx - 1 \varepsilon$~~
 ~~$x^r - \varepsilon x = 0$~~

q1 ~~...~~ $a + b = ra = a - rb + 1$

(r)

$b = a$
 $ra = -a + 1$
 $ra = 1$
 $a = \frac{1}{r} \checkmark$

l.o.1 $f(x) = \frac{\varepsilon x^r - ax + c + 1}{bx + r}$

$f(1) = 1 = \frac{\varepsilon - a + c + 1}{b + r} \Rightarrow \frac{a + c - a}{b + r} = 1 \rightarrow r + c = b + a$

$f(r) = r = \frac{\varepsilon r^r - ra + c + 1}{rb + r} \Rightarrow \varepsilon b + r = \varepsilon r^r - ra + c + 1$
 $\varepsilon b + ra - a = c + r$

$$f(x) = x$$

$$\frac{xy - xa + c + 1}{x^2 b + x} \Rightarrow \frac{a+b+c}{c+r} = \frac{c+r}{c+r}$$

$$c+r = xa + xb - xy$$

$$b+a = xa + xb - xy$$

$$\begin{aligned} xa + xb &= xy \\ a+b &= xy \end{aligned}$$

$$\begin{aligned} b+xa-a &= b+a \\ xb+a &= a \end{aligned}$$

$$\begin{cases} xb+a = a \\ a+b = xy \end{cases} \Rightarrow \begin{aligned} xb &= -a \\ b &= -\frac{a}{x} \\ a &= -bx \end{aligned}$$

$$xy = c+r \Rightarrow \frac{c+r}{c+r}$$

$$a+b+c = 1a + 11 - r = \dots$$

11

$$y = x^2 - a \xrightarrow{(-1, -\epsilon)} -\epsilon = -3a \rightarrow a = \frac{\epsilon}{3}$$

$$y = x^2 + x + b \xrightarrow{(-1, -\epsilon)} -\epsilon = -r + b \rightarrow b = -r - \epsilon$$

$$\begin{cases} y = x^2 - 1 \\ y = x^2 + x - r \end{cases} \rightarrow y = y$$

$$x^2 - 1 = x^2 + x - r$$

$$x^3 - rx - 1 = 0$$

توان های زوج برابر توان
توان های برابر یک ریشه است

$$\begin{array}{r|l} x^3 - rx - 1 & x+1 \\ -x^3 - x^2 & x^2 - x - 1 \\ \hline -x^2 - rx - 1 & \\ +x^2 + x & \\ \hline -x - 1 & \\ +x + 1 & \\ \hline 0 & \end{array}$$

$$\frac{x^3 - rx - 1}{x+1} = x^2 - x - 1$$

$$(x+1) / (x^2 - x - 1) = 0$$

حیثی ریشه های مساوی می شود صول نقاط

$$\frac{1}{1} = \frac{-b}{a} = \dots$$

(2)

$$\frac{fn^r - an + C + 1}{bn + r} = n \rightarrow fn^r - an + C + 1 = bn^r + rn$$

$b = f$ $a = -r$ $C = -1$ $\xrightarrow{\text{جمع}}$ صفر

$f(n) = n$ ضابطه تابع همانند بصورت