

الف) $(x^2 + y^2 = 9)$

$$\begin{cases} x + 2y = -4 \\ x - 2y = 18 \end{cases}$$

$$\begin{aligned} 4x &= 14 & \frac{x}{4} &= \frac{-2}{4} \\ x &= 2 & \frac{y}{4} &= \frac{1}{4} \\ y &\rightarrow x + 2y = -4 & & \\ 2y &= -4 - 2 \rightarrow y &= -3 & \end{aligned}$$

ب) $\frac{1}{x} - \frac{1}{y} = -1$ $\frac{y-x}{xy} = -1$

$$\frac{5}{x} - \frac{1}{y} = -3 \quad \frac{5y - 1x}{xy} = -3$$

$$\frac{y-x}{xy} \times \frac{xy}{5y-1x} = \frac{1}{3}$$

$$\frac{3y - 1x}{3xy} = \frac{1}{3} \quad \frac{x}{y} = \frac{1}{2}$$

$$\begin{aligned} 2a + 2b &= 3a + 3 & 2b &= a + 3 \\ a + 1 &= -2 & 2b &= -3 + 3 \\ a &= -3 & 2b &= 0 \\ & & b &= 0 \end{aligned}$$

$$m^2 - 2m = -2$$

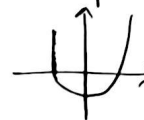
$$m^2 - 2m + 2 = 0$$

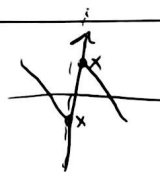
$$(m-1)(m-2) = 0$$

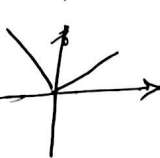
$$\begin{aligned} & \rightarrow (m+1, 4) \quad (3, 5) \\ & \rightarrow (m+1, 4) \quad (2, 4) \end{aligned}$$

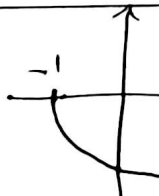
$$(m^2 + 2, m+1) = (3, 5) \quad \text{بدانای جمع مقدار}$$

الف)  تابع نیست

ب)  تابع است

ج)  تابع نیست

د)  تابع است

الف)  تابع است

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

$$x^2 = y^2(1+x^2) \quad y^2 = \frac{x^2}{1+x^2} \quad y = \pm \sqrt{\frac{x^2}{1+x^2}}$$

الف) $x=1$ ، $|y|=1$ ، $y=\pm 1$ تابع نسبت

ب) $y^{r+1} + y^r + \dots + y + 1 = \lim_{n \rightarrow \infty} (y+1)^n - x^{r+1} - 2x + 1 = 0$
 $y = \sqrt[r]{-2x^{r+1} - 1}$
 تابع نسبت \rightarrow برای هر x معادله $y = 1$

$$\frac{r+r - r\sqrt{r} + r\sqrt{r} - 1 + r}{r+r - r\sqrt{r} + r\sqrt{r} - 1 + r} = \frac{r}{-1} = \frac{-1}{r}$$

$y = x^{m-a}$

$-r - r - 1 \rightarrow a = 1 \Rightarrow y = x^{r-1}$

$-r = -1 - 1 \rightarrow b = -r \Rightarrow y = x^{r+a} + x - r$

$x^r - rx - 1 = 0 \Rightarrow (x+1) = (x^r - m - 1)$
 $\hookrightarrow \frac{(x+1)(x^r - m - 1)}{-1} \hookrightarrow x = \frac{1 \pm \sqrt{1+r}}{r}$
 $x_1 + x_2 = \frac{1 + \sqrt{1+r} + 1 - \sqrt{1+r}}{r} = \frac{2}{r} = 1$

$a+b = ra$

$a = b$

$-ra + 1 = ra$

$-ra - ra = -1$

$ra = \frac{1}{2}$
 $a = \frac{1}{r}$

~~$\frac{ax^r + b}{bx+r} = x$~~

$\frac{rx^r - ax + c + 1}{bx+r} = x$

$rx^r - ax + c + 1 = bx^r + rx$

$\rightarrow b = r$

$a = -r$

$c = -1$