

$$\begin{cases} x - y = -1 \\ \frac{-x}{x} + \frac{y}{y} = 0 \end{cases} \Rightarrow \frac{y}{x} = 1 \Rightarrow y = x$$

برای  $y = -x$   $\rightarrow y = -x$

الف  $(1, 2+2y), (3x-2, -4) \rightarrow$   
 ب  $(-1, -3), (\frac{1}{x} - \frac{1}{y}, \frac{x}{x} - \frac{y}{y})$

$x + 2y = -4$   
 $3x - y = 9$   $\rightarrow$   $x = 2$   
 $x + 2y = -4$   
 $2x - 2y = 18$   
 $4x = 14$   
 $x = \frac{7}{2}$

$\frac{1}{x} - \frac{1}{y} = -1$   
 $\frac{1}{x} - \frac{1}{y} = -1$   
 $\frac{1}{x} = -1 + \frac{1}{y}$   
 $\frac{1}{x} = -1 \rightarrow x = -1$

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

$P = \{(a, a), (1, a+1), (1, -2), (2, b)\}$   
 $P(a) + rP(2) = 3P(1) \rightarrow -r + 2b = -4 \rightarrow 2b = 0 \rightarrow b = 0$

$P = \{(-2, -2), (1, -2), (2, -2), (2, b)\}$

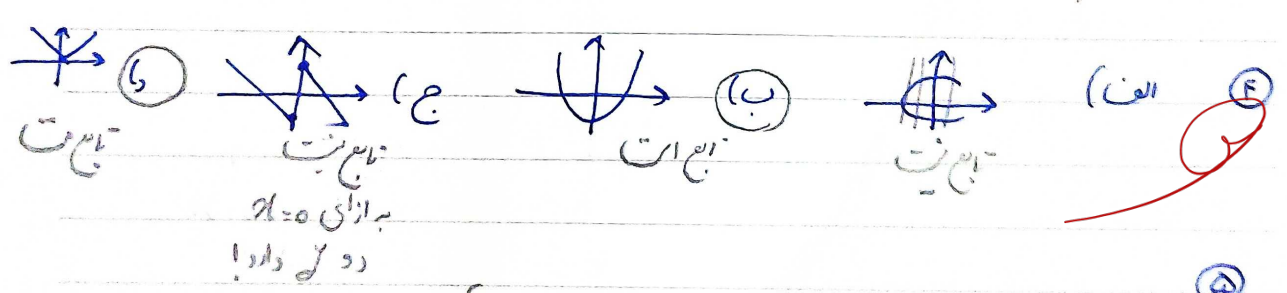
$P = \{(-1, m^2 - 3m), (3, 5), (-1, -2), (m+1, 4), (2, 4)\}$

$(m^2 + 2, 4m + 1) \rightarrow m=1 \rightarrow (-1, -2), (3, 5), (-1, -2), (2, 4), (2, 4)$   
 $(3, 5)$   $\rightarrow$   $m=2$

$m^2 - 3m = -2$

$m^2 - 3m + 2 = 0 \rightarrow (m-1)(m-2) = 0$   
 $m=1$   $\times$   
 $m=2$   $\times$

$m=2 \rightarrow \{(-1, -2), (3, 5), (3, 4), (2, 4), (4, 9)\}$   $\checkmark$



الف  $y = -\sqrt{x+1} \rightarrow \begin{cases} y_1 = -\sqrt{x+1} \\ y_2 = -\sqrt{x+1} \end{cases} \Rightarrow y_1 = y_2$

ب  $x = \frac{y}{\sqrt{1-y^2}} \rightarrow x = 0 \rightarrow \frac{y}{\sqrt{1-y^2}}$

dotnote  $\frac{x_1}{\sqrt{1-y_1^2}} = \frac{y_2}{\sqrt{1-y_2^2}}$   
 $(1+y)(1-y) > 0 \rightarrow \frac{-1}{-1+1} =$

$\frac{x_1^2}{1-y_1^2} = \frac{x_2^2}{1-y_2^2} = x_1^2 - \frac{y_1^2 x_1^2}{1-y_1^2} = x_2^2 - \frac{y_2^2 x_2^2}{1-y_2^2}$   
 $x_1 = x_2$

④ بین ازین نظر  $|y| = x \xrightarrow{x=1} |y|=1 \rightarrow y=+1$   
 $y=-1$  در صورتی

ب)  $y^3 + 3y^2 + 3y + x^3 + x = 0$   $(y+1)^3 = 1 - x^3 - x$   $(y+1)^3 = 1 - x^3 - x$   
 $(y+1)^3 - 1 \rightarrow (y+1)^3 = 1 - x^3 - x$   $(y+1)^3 = 1 - x^3 - x$   
 $y_1 = y_2$   $y_{i+1} = y_{i+1}$

$P(x) = \frac{x^2 + 4x + 8}{x^2 + 4x + 7} = \frac{(\sqrt{3}-2) + \sqrt{3} - 1 + 8}{(\sqrt{3}-2)^2 + 2\sqrt{3} - 1 + 7} \Rightarrow \frac{1 + \sqrt{3} - 1 + 8}{5 + 3 + 4 - 4\sqrt{3} - 1 + 7} = \frac{8}{14 - 4\sqrt{3}}$

$P(\sqrt{3}-2)$

①  $P(x) = x^2 + ax + b \rightarrow -f = -1 - a + b \rightarrow -f = -1 - 1 + b \rightarrow b = -f$   
 $y - 2x + a = 0 \rightarrow -f + 2 + a = 0 \rightarrow a = 1$

$P(x) = x^2 + x - 1$   $b = a - 2$

$y = 2x - a \Rightarrow 2x - 1$

$x^2 - 2x - 1 = 0 \rightarrow x = -1$   
 $(x+1)(x^2 - x - 1) = 0$   
 $\frac{x^2 - 2x - 1}{x^2 - x - 1} \rightarrow \frac{-x^2 + 2x}{x^2 - x - 1}$

$P = \{(r, a+b), (1, 2a), (-1, a-2b+1)\}$

$a+b = 2a$   $a-2b+1 = 2a$

$b = a$

$a - 2a + 1 = 2a$

$1 - 2a$

$b = a = \frac{1}{2}$

$P(x) = \frac{fx^2 - ax + c + 1}{bx + 1}$   $x=1 \Rightarrow \frac{f-a+c+1}{b+1} = 1 \Rightarrow \frac{f-a}{b+1} = 1$   
 $x=0 \Rightarrow \frac{c+1}{1} = 0 \rightarrow c = -1$

$\Rightarrow c+b+a = -1+1=0$

$f-a = b+1$   
 $1 = b+a$