

الف) $3ax - y = 9$, $2ax - 2y = 1$ $\rightarrow v_1 = 1$, $u = 2y = 1 \rightarrow \frac{ax}{y} = \frac{-2}{3}$

$ax + 2y = -4$

ب) $\frac{1}{ax} - \frac{1}{y} = -1$ $\times (-ax)$, $\frac{a}{y} - \frac{a}{ax} = -a$ $\rightarrow \frac{-2}{y} = 2 \rightarrow y = -1$ $\rightarrow \frac{a}{-1} - \frac{a}{ax} = -a$ $\rightarrow \frac{a}{-1} - \frac{1}{x} = -a$ $\rightarrow \frac{1}{x} = a - \frac{a}{-1} = a + a = 2a$ $\rightarrow x = \frac{1}{2a}$

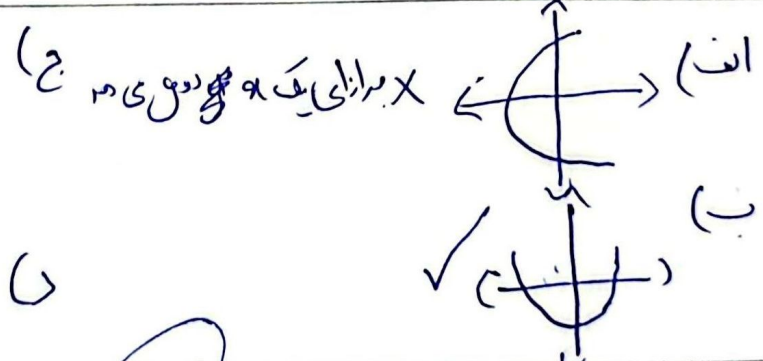
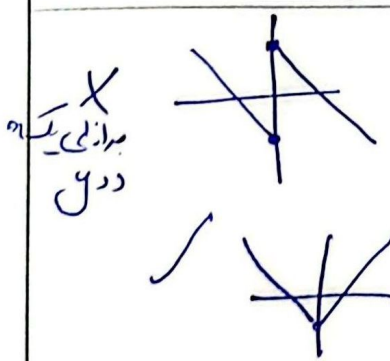
$f = \{(a, xa), (1/a, a), (1/2, 2), (2, 1)\} \Rightarrow a + 1 = -2 \Rightarrow a = -3$

$f(a) + 2f(2) = 3f(1) \Rightarrow -4 + 2b = -4 \Rightarrow b = 0$

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

$m^2 - 3m = -2 \Rightarrow m^2 - 3m + 2 = 0 \Rightarrow (m-1)(m-2) = 0$ $\left\{ \begin{array}{l} m=1 \rightarrow (2, 4) \times \\ m=2 \rightarrow (4, 9) \times \end{array} \right.$

هیچ ستاره



الف) $y = -\sqrt{ax+1}$



ب) $a_1 = \frac{y}{1-y^2}$, $a_2 = \frac{y}{1-y^2}$ $\rightarrow a_1 = a_2$ $\rightarrow \frac{y}{1-y^2} = \frac{y}{1-y^2}$ $\rightarrow y = y$

باید است

تابع نیت $|y| = a \xrightarrow{a=1} 1 = |y| \Rightarrow y = 1$
 $y = -1$

ب) $y^3 + 3y^2 + 3y + 1 = 0 \Rightarrow (y+1)^3 - 1 = -a^3 - a \Rightarrow (y+1)^3 = 1 - a^3 - a$
 $\Rightarrow y = \sqrt[3]{1 - a^3 - a} - 1$ تابع است

$f(x) = \frac{a^2 + f(x) + \omega}{a^2 + a + \omega} - f(x) = \frac{(a^2 + 2) + 1}{(a+2)^2 + 3} \xrightarrow{a = \sqrt{2}-2} f(\sqrt{2}-2) = \frac{(\sqrt{2})^2 + 1}{(\sqrt{2})^2 - 3} = \frac{3}{-1} = -3$

$y - 2x + a = 0 \Rightarrow y = 2x - a$
 $f(x) = x^3 + ax + b$
 $\Rightarrow y = 2x - 1$
 $f(x) = x^3 + x - 2$
 تابع $2x - 1 = x^3 + x - 2 \Rightarrow x^3 - 2x + 1 = 0$
 $(x+1)(x^2 - x - 1) = 0 \Rightarrow x^2 - x - 1 = 0 \Rightarrow x = \frac{1 \pm \sqrt{5}}{2}$

$F = \{(2, a+b), (1, 2a), (-1, a-2b-1)\}$ تابع نیت
 $a+b = 2a \Rightarrow b = a$
 $2a = a - 2b + 1 = -a + 1 \Rightarrow 3a = 1 \Rightarrow a = \frac{1}{3}$

$f(x) = \frac{bx^2 - aax + c}{bx + 2}$ تابع طاقی $\Rightarrow m = \frac{bx^2 - aax + c}{bx + 2} = bx^2 + 2a = bx^2 - aax + c + 1$
 $\Rightarrow (b-b)a^2 + (-a-2a)a + (c+1) = 0 \Rightarrow b = 2, a = -3, c = -1$
 $a + b + c = -3 + 2 - 1 = 0$