

$$\underbrace{a + b = \gamma a = a - \gamma b + 1}_{a = b} \quad (9)$$

$$a - \gamma a + 1 = \gamma a \Rightarrow \gamma a = 1 \Rightarrow a = \frac{1}{\gamma}$$

$$f(x) = \frac{kx^r - ax + c + 1}{bx + r} \quad (10)$$

$$f(x) \stackrel{\text{صافي}}{\rightarrow} x = \gamma \Rightarrow f(x) = x = \frac{kx^r - ax + c + 1}{bx + r}$$

$$bx^r + \gamma x = kx^r - ax + c + 1$$

$$b = k \Rightarrow a = -\gamma, \quad c = -1$$

$$a + b + c = k - \gamma - 1 = 0$$

$(a = 3x - y) \wedge 2$
 $x + 2y = -4$
 $+ 4x - 2y = 18$
 $\frac{5x = 14 \Rightarrow x = \frac{14}{5} \quad \frac{x}{5} = -\frac{2}{5}$
 $2 + 2y = -4 \Rightarrow y = -3$

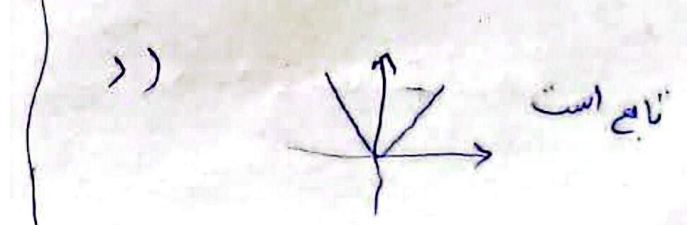
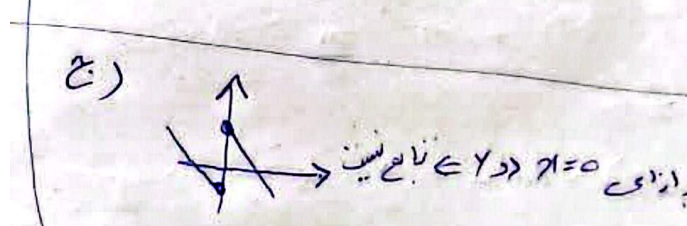
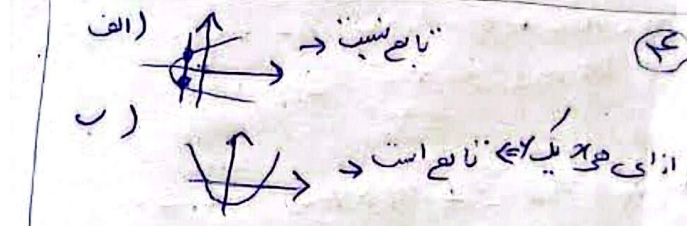
آیدین اثری
گروه A

ب) $-1 = \frac{1}{x} - \frac{1}{y}$
 $-3 = \frac{5}{x} - \frac{5}{y}$
 $-5 = \frac{5}{x} - \frac{5}{y}$
 $y = -\frac{2}{5} \Rightarrow y = -1 \quad \frac{x}{y} = 2$
 $x = -\frac{1}{5}$

$f(a) + 2f(2) = 3f(1)$
 $2a + 2 \times 2 = 3 \times 1 - 2$
 $(1, a+1) = (1, -2) \rightarrow$ شرط تابع بودن f
 $a+1 = -2 \Rightarrow a = -3$
 $2x - 3 + 2x \times b = -4 \Rightarrow b = 0$

ج) $(-1, -2) = (-1, m^2 - 3m)$
 $m^2 - 3m = -2 \quad m^2 - 3m + 2 = 0$
 $(m-1)(m-2) = 0 \Rightarrow m = 1$
 $m = 2$

f m=1 m+1=2
 (2 و 4) و (2 و 4) \rightarrow تابع نسبت
 پس فقط m=2 قابل قبول



$$y = yx - a$$

$$-f = -y - a \Rightarrow a = 1 \quad \textcircled{1}$$

$$f(x) = x^y + ax + b$$

$$-f = -1 + 1 + b \Rightarrow b = -1$$

$$x^y + x - 1 = yx - 1$$

$$x^y - yx + 1 = 0$$

$$x^y - yx + 1$$

$$x^y + x^y$$

$$-x^y - yx - 1$$

$$-x^y - x$$

$$-x = 1$$

$$\frac{x+1}{x^y - x - 1}$$

$$x^y - x - 1 = 0$$

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

$$b) x = \frac{y}{\sqrt{1-y^2}}$$

$$\sqrt{1-y^2} \cdot x = y$$

$$x^2 - 1 \cdot y^2 = y^2 \Rightarrow y^2(x^2 + 1) = x^2$$

$$y^2 = \frac{x^2}{x^2 + 1}$$

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

به ازای هر x یک y دهه
 $y_1 = \frac{x}{\sqrt{x^2 + 1}}$

الف) $|y| = x \Rightarrow x=1 \Rightarrow y = \pm 1$

ب) تابع نسبت
 $(y+1)^w + x^w + x = 1$

تابع است
 $(y+1)^w = 1 - x^w - x \Rightarrow$
 چون $y+1$ توان فرد دارد

$$f(x) = \frac{x^2 + 5x + 6}{x^2 + 4x + 3}$$

$$\frac{(x+2)^2 + 1}{(x+2)^2 + 3} = f(x)$$

$$f(\sqrt{3}-2) = \frac{(\sqrt{3}-2+2)^2 + 1}{(\sqrt{3}-2+2)^2 + 3} = \frac{3}{5} = \frac{2}{3}$$