

الف)  $a = 3m - 9$   
 $-4 = m + 2y \rightarrow -12 = 3m + 4y$   
 $\rightarrow 3m - y - (3m + 4y) = 21 = -7y \Rightarrow y = -3 \Rightarrow m = 2$

$\Rightarrow \frac{m}{y} = \frac{2}{-3}$  ✓

$-1 = \frac{1}{m} - \frac{1}{y} \rightarrow -8 = \frac{8}{m} - \frac{8}{y}$   
 $-4 = \frac{8}{m} - \frac{4}{y}$   
 $\Rightarrow -2 = \frac{2}{m} - \frac{1}{y} \Rightarrow y = -1 \Rightarrow m = \frac{-1}{-2} = \frac{1}{2}$

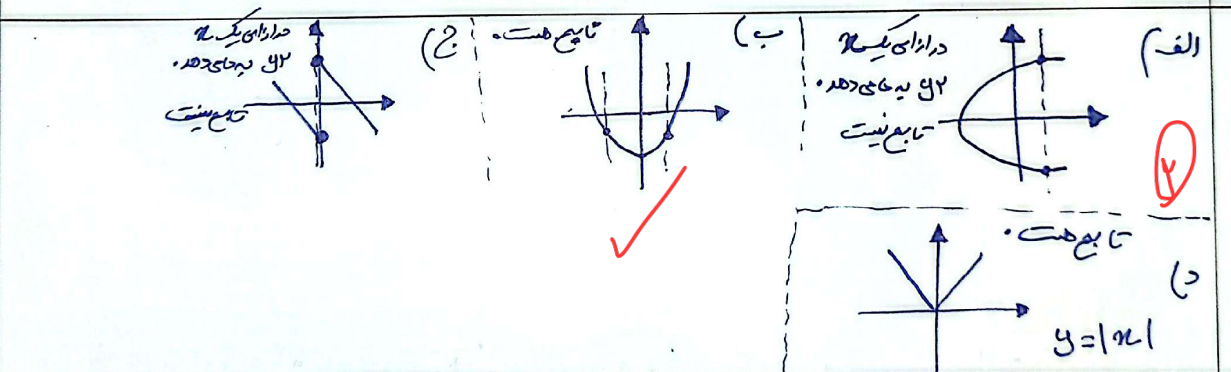
$a+1 = -2 \Rightarrow a = -3$

$\{(-3, -4), (1, -2), (2, b)\} \rightarrow \frac{f(-3)}{-4} + 2 \frac{f(1)}{2b} = 3 \frac{f(2)}{-6}$   
 $\Rightarrow b = 0$

$m^2 - 3m = -2 \Rightarrow m^2 - 3m + 2 = 0 \xrightarrow{abc} \begin{cases} m = 1 \\ m = \frac{c}{a} = 2 \end{cases}$

$m = 1 \rightarrow \{(2, 4), (2, 4)\} \rightarrow$  غنای  
 $m = 2 \rightarrow \{(3, 6), (3, 4)\} \rightarrow$  غنای

همه صفار  $m$



الف)  $y = -\sqrt{x+1} \rightarrow x+1 \geq 0 \rightarrow x \geq -1$  تابع است ✓ م. ۱. ۵

$x = \frac{y}{\sqrt{1-y^2}} \rightarrow 1 - y^2 > 0 \rightarrow 1 > y^2 \rightarrow \pm 1 > y$  تابع نیست

$x = \frac{y}{\sqrt{1-y^2}} \rightarrow \begin{cases} x = \frac{y_1}{\sqrt{1-y_1^2}} \\ x = \frac{y_2}{\sqrt{1-y_2^2}} \end{cases} \rightarrow \frac{y_1}{\sqrt{1-y_1^2}} = \frac{y_2}{\sqrt{1-y_2^2}} \rightarrow |y_1| = |y_2|$

$y_1 = y_2 \rightarrow$  تابع است

$$x=1 \rightarrow y=\pm 1$$

$$|y| = x \text{ (الف)}$$

$$y^x + x y^y = x^x - x \quad x=0 \rightarrow 0 \Rightarrow \text{معتاد} \quad y=0 \rightarrow 0$$

✓  
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$$x = \sqrt{x-1}$$

$$\frac{x^x + e x + 5}{x^x + e x + 1} \sim \frac{x + e - e\sqrt{x-1} + e\sqrt{x-1} - 1 + 5}{x + e - e\sqrt{x-1} + e\sqrt{x-1} - 1 + 1} = \frac{x}{1} = \frac{x}{1}$$

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$$x^x + a x + b = f(x) \rightarrow x^x + x + b = y \quad x=1, y=f \rightarrow b = -2 \quad x^x + x - 2 = y$$

$$y = x^x + a x + e \rightarrow x=1, y=f \rightarrow a = 1$$

①

$$① \rightarrow \begin{matrix} x & y \\ -1 & -f \\ -x^x & -1 \end{matrix}$$

$$② \rightarrow \begin{matrix} x & y \\ -1 & -f \\ -e & -1 \end{matrix}$$

$$y = x^x - a = x^x + a x + b \xrightarrow{a=1, b=-2} x^x - 1 = x^x + x - 2 \rightarrow x^x - x - 1 = 0 \xrightarrow{\text{نقطة}} x = -1$$

$$x^x - x - 1 = (x+1)(x^x - x - 1) = 0 \rightarrow x^x - x - 1 = 0 \rightarrow S = \frac{-b}{a} = 1$$

$$a + b = x a \rightarrow b = a \Rightarrow x a = a - \frac{b}{x} + 1 \Rightarrow x a = 1 \rightarrow a = \frac{1}{x}$$

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$$x=1 \rightarrow 1 = \frac{f - a + c + 1}{b + x} \rightarrow b + x = f - a + c + 1 \xrightarrow{a+c} a + b + c + x = f + c + 1 \Rightarrow a + b + c = f + c$$

$$x=0 \rightarrow 0 = \frac{c+1}{x} \Rightarrow 0 = c+1 \rightarrow c = -1$$

$$f + x c \xrightarrow{c=-1} 0 \Rightarrow a + b + c = 0$$

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