

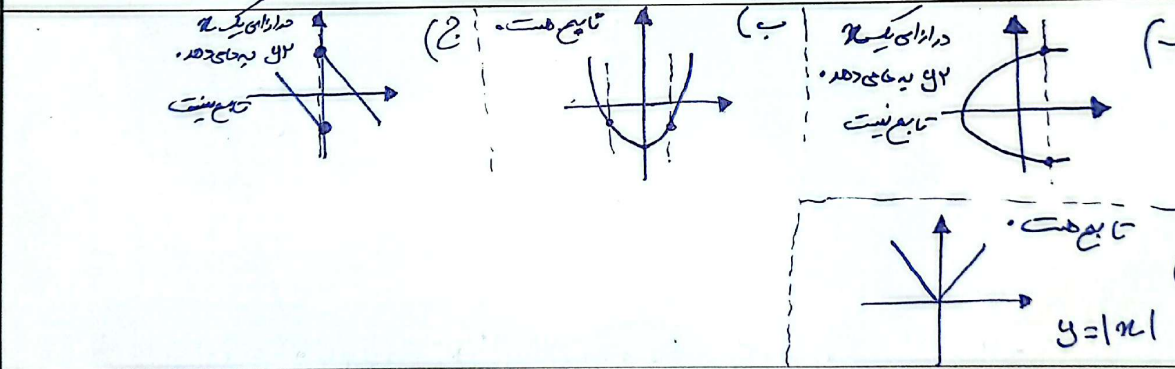
الف) $a = 3m - 9$
 $-4 = m + 2y \xrightarrow{\times 3} -12 = 3m + 4y$
 $\rightarrow 3m - y - (3m + 4y) = 21 = -7y \Rightarrow y = -3 \Rightarrow m = 2$
 $\Rightarrow \frac{m}{y} = \frac{2}{-3}$

ب) $-1 = \frac{1}{m} - \frac{1}{y} \xrightarrow{\times 6} -6 = \frac{6}{m} - \frac{6}{y}$
 $-2 = \frac{6}{m} - \frac{6}{y} \xrightarrow{\times m} -2m = 6 - \frac{6m}{y} \Rightarrow -2 = \frac{6}{y} \Rightarrow y = -1 \Rightarrow m = \frac{-1}{2}$
 $\Rightarrow \frac{m}{y} = \frac{-1/2}{-1} = \frac{1}{2}$

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

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

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



الف) $y = -\sqrt{x+1} \rightarrow x+1 \geq 0 \rightarrow x \geq -1$ تابع هست

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

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

$$|y|=x \text{ (الف)}$$

$$y^x + x y^y = x^x - x \quad \begin{matrix} x=0 \rightarrow 0 \\ y=0 \rightarrow 0 \end{matrix} \Rightarrow \text{مطلوب}$$

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$$x = \sqrt{x-1}$$

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

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$$x^x + a^x + b = f(x) \rightarrow x^x + x + b = y \xrightarrow{x=-1, y=-1} \underline{b = -2} \quad \textcircled{1} x^x + x - 2 = y$$

$$\textcircled{2} y = x^x + a = 0 \xrightarrow{x=-1, y=-1} \underline{a = 1}$$

$$\textcircled{1} \rightarrow \begin{matrix} x & y \\ -1 & -1 \\ -2 & -0 \end{matrix} \quad \textcircled{2} \rightarrow \begin{matrix} x & y \\ -1 & -1 \\ -1 & -0 \end{matrix} \sim -2 + (-1) = \underline{-3}$$

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

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

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

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

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