

$2y = -4$   
 الف)  $y = -2$   
 $9 = 2x + 2$   
 $v = 2x$   
 $x = \frac{v}{2}$   
 $\frac{x}{y} = \frac{\frac{v}{2}}{-2} = \frac{v}{-4}$

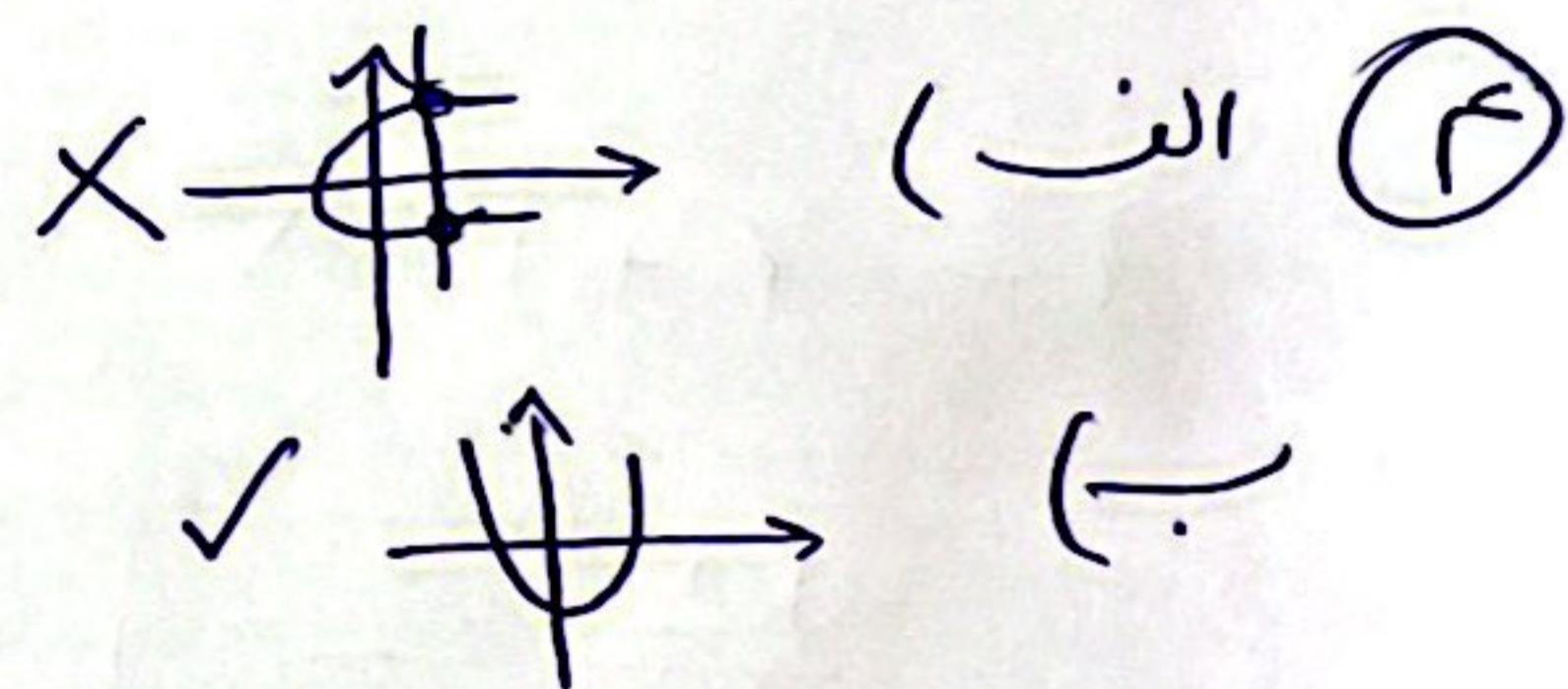
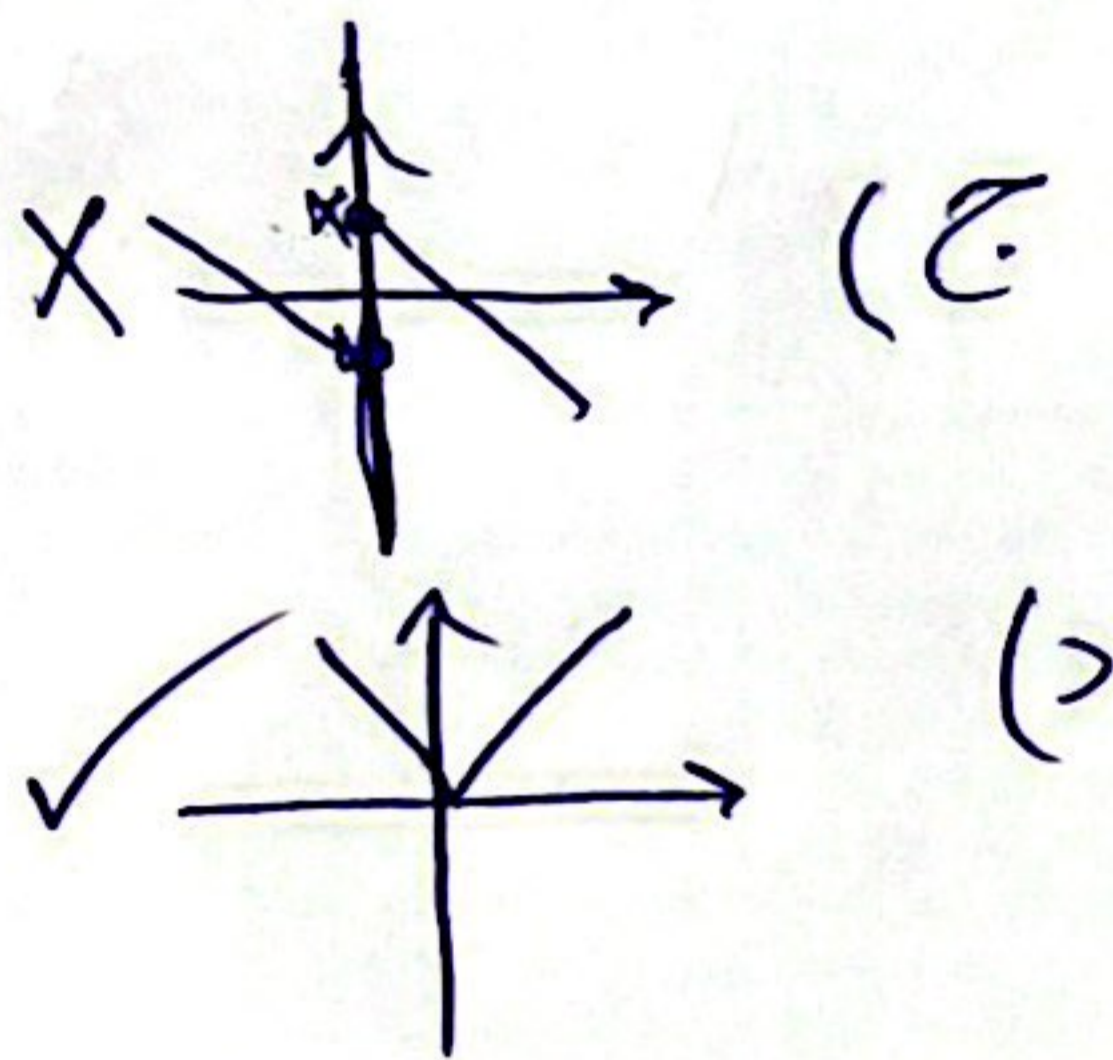
ب)  $\frac{1}{x} - \frac{1}{y} = -1$   
 $\frac{1}{x} = \frac{1}{y} - 1$   
 $\frac{1}{x} = -\frac{2}{3} \rightarrow x = -\frac{3}{2}$   
 $\frac{5}{x} - \frac{v}{y} = -3$   
 $\frac{1-v}{y} = -2 \rightarrow +4 = +2y$   
 $y = 2$   
 $\frac{x}{y} = \frac{-\frac{3}{2}}{2} = \frac{-3}{4}$

$a + 1 = -2 \rightarrow a = -3$   
 $\frac{-4}{2}a + 2b = -4$   
 $b = 0$

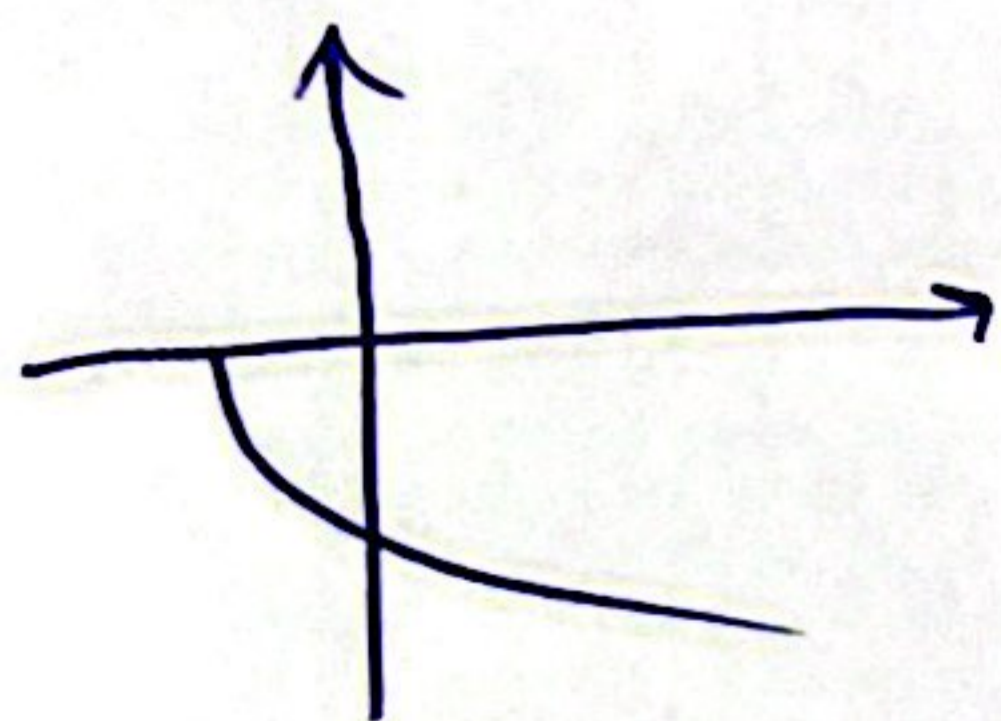
$m^2 - 3m = -2$   
 $m^2 - 3m + 2 = 0$   
 $(m-1)(m-2) = 0$   
 $m = 1, 2$

محل جذر  $m$

$(2, 4) (5, 4) \leftarrow \frac{m}{x} \frac{m}{x} \rightarrow (3, 5) (3, 4)$



الف)



تابع است

ب)  $x = 1 \rightarrow y^2 = 1 - y^2$

تابع است  $2y^2 = 1 \rightarrow y^2 = \frac{1}{2} \rightarrow y = \pm \frac{1}{\sqrt{2}}$

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④

⑤

$$\text{تابع نسبی} \rightarrow y = \pm 3 \rightarrow x = 3$$

(4)

تابع است (ب)

$$x_1^3 + x_1 = x_2^3 + x_2$$

$$(y_1 + 1)^3 - 1 = (y_2 + 1)^3 - 1$$

$$y_1 = y_2$$

$$\frac{(x+2)^2 + 1}{(x+2)^2 + 3} = \frac{3+1}{4} = \boxed{\frac{2}{3}}$$

(5)

$$y = 3x - a \rightarrow y = 2x - 1$$

(6)

$$x = -1 \rightarrow -f = -2 - a \rightarrow a = 1$$

$$f(x) = x^2 + x + b \rightarrow -1 - 1 + b = -f \rightarrow b = -2$$

$$x = -1$$

$$f(x) = x^2 + x - 2$$

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

$$x^2 - x + 1 = 2$$

$$x^2 - x - 1 = 0 \quad \Delta = \omega$$

$$\boxed{\frac{1 \pm \sqrt{\omega}}{2}}$$

$$2a = a + b$$

$$a = b$$

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

$$3a = 1$$

$$\boxed{a = \frac{1}{3}}$$

$$x = 0 \rightarrow \frac{c+1}{3} = 0 \rightarrow c = -1$$

$$x = 1 \rightarrow \frac{f-a}{b+3} = 1 \rightarrow f-a = b+3$$

$$b+a=1$$

$$\boxed{a+b+c=0}$$