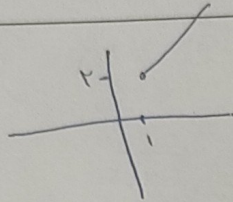
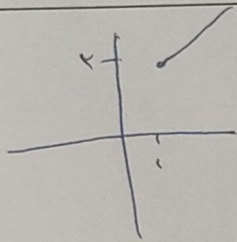


الف) $(m, 3) = (2, 2) \rightarrow m = 2$
 $(a, 1) = (-1, 1) \rightarrow a = -1$
 $(1, n) = (1, 2) \rightarrow n = 2$

ب) $(m, 3) = (2, 2) \rightarrow m = 3$
 $(3, 2) = (2, n) \rightarrow n - 1 = 2 \rightarrow \begin{cases} n = 2 \\ n = -1 \end{cases}$



$x = a < 2$
 $1 + a < 2$
 $a < 1$



$a < 2$
 $a < 3$
 $a < 3$
 $a > 0 \rightarrow$ ^{شماره صفر یا منفی ندارد}

$y = x^2 - 4x + 4 = 2$

$y = (x - 2)^2 - 2$ $x = 2 \pm \sqrt{y + 2}$ $x = 2 \pm \sqrt{y + 2}$
 یک به یک است

الف) $y_1 = x_1^3 - 2$ $y_2 = y_1$ $x_1^3 - 2 = x_2^3 - 2 \rightarrow x_1 = x_2$
 $y_2 = x_2^3 - 2$
 یک به یک است

$x = y^3 + 2 \rightarrow y^3 = x - 2$ $y = \sqrt[3]{x - 2}$

$g(x, 2y) = 4 + 2x$ $n(y, 2) = 4 - 2y$

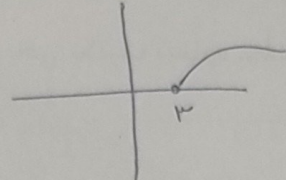
$x = \frac{2y + 4}{2 - y}$ ^{هموار است} ^{یک به یک است}

الف) $g(x, 2y) = 4 + 2x$ $n(y, 2) = 4 - 2y$

$n = \frac{2y + 4}{y - 2}$ ^{هموار است} ^{یک به یک است}

$y = \frac{2x + 4}{x - 2}$

$x = \frac{-b}{a} = \frac{-5}{-5} = 1$ مميز (ف)
 $y = x^2 - 5x + 6 \rightarrow y = (x-2)^2 - 1 \rightarrow x = (y+1)^2 - 1$
 $x+1 = (y+1)^2 \rightarrow \sqrt{x+1} = y+1 \rightarrow \boxed{\sqrt{x+1} + 1 = y}$



مميز
 $x = \sqrt{y+1}$ $x^2 = y+1$ $\boxed{y = x^2 + 1}$ $x \geq 0$

$y = x + \sqrt{x} + \frac{1}{x} - \frac{1}{x} \rightarrow (\sqrt{x} + \frac{1}{\sqrt{x}})^2 - \frac{1}{x} = y \rightarrow y + \frac{1}{x} = (\sqrt{x} + \frac{1}{\sqrt{x}})^2 \rightarrow \sqrt{y + \frac{1}{x}} = \sqrt{x} + \frac{1}{\sqrt{x}}$
 $\sqrt{x} = \sqrt{y + \frac{1}{x}} - \frac{1}{\sqrt{x}} \rightarrow x = y + \frac{1}{x} - \frac{1}{\sqrt{x}} + \frac{1}{x} \rightarrow x = y - \frac{1}{\sqrt{x}} + \frac{2}{x} \rightarrow \boxed{y = x - \sqrt{x} + \frac{1}{x}}$
 $a = 1, b = \frac{1}{x}, c = -\frac{1}{x}$

$y = y^2 \rightarrow \frac{x^2}{x^2-1} = \frac{x^2}{x^2-1} \rightarrow x^2 - 2x^2 = x^2 - 2x^2 \rightarrow x = 0$ مميز
 $x = \frac{y}{\sqrt{y^2-1}} \rightarrow x^2 = \frac{y^2}{y^2-1} \rightarrow y^2 x^2 - x^2 = y^2 \rightarrow y^2 = \frac{x^2}{x^2-1} \rightarrow y = \pm \sqrt{\frac{x^2}{x^2-1}} \rightarrow \boxed{y = \frac{\sqrt{2} x}{\sqrt{x^2-1}}}$

$f(x) = \frac{x}{1-x} \rightarrow y = \frac{x}{1-x} \rightarrow x = \frac{y}{1+y} \rightarrow y = \frac{x}{1-x} \rightarrow y = \frac{\frac{y}{1+y}}{1 - \frac{y}{1+y}} = \frac{y}{1+y} \cdot \frac{1+y}{1} = y$
 $y(x) = \sqrt{x} - 1 \rightarrow x = \sqrt{y} - 1 \rightarrow y = (x+1)^2 \rightarrow y = (1 + \frac{1}{x})^2 = \frac{1}{x^2} + \frac{2}{x} + 1 \rightarrow \boxed{f(x) = \frac{1}{x^2} + \frac{2}{x} + 1}$

$f(x) = \sqrt{x+1} \rightarrow y = \sqrt{x+1} \rightarrow y^2 = x+1 \rightarrow x = y^2 - 1 \rightarrow y = \sqrt{x+1} \rightarrow f(x) = \sqrt{x+1}$
 $f(x) = \sqrt{x+1} = 14 \rightarrow \sqrt{x+1} = 14 \rightarrow x+1 = 196 \rightarrow x = 195$
 $\sqrt{f(x)} = 14 \rightarrow f(x) = 196$
 $x^2 + 1 = 9 \rightarrow x^2 = 8 \rightarrow \sqrt{x^2} = \sqrt{8} \rightarrow x = \pm 2\sqrt{2}$