

20

حسابی، تالیفی، ...

$$(1) (3, 2), (3, n-n) \rightarrow n-n=2 \rightarrow n-n-2=0$$

$$\rightarrow (n+1)(n-2) \rightarrow n=-1 \times \dots$$

$$(3, 2), (2, \omega), (m, 2), (-1, 2) \checkmark$$

$$n=2$$

2

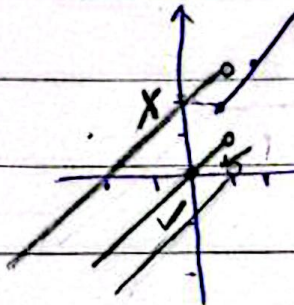
$$(1) (2, 3), (m, 2) \rightarrow m=2$$

$$(a, 1), (-1, 1) \rightarrow a=-1$$

$$(1, n), (1, 2) \rightarrow n=2 \checkmark$$

$$f(x) = \begin{cases} x^2 - 1; & x \geq 1 \\ ax + a; & x < 1 \end{cases}$$

$\rightarrow$



بسیار ساده است
راستی؟
اعداد منتهی نیست.

3

$$\Rightarrow a \in (-\infty, 1]$$

$$f(x) = \begin{cases} x^2 - 1; & x \geq 1 \\ ax + a - 1; & x < 1 \end{cases}$$

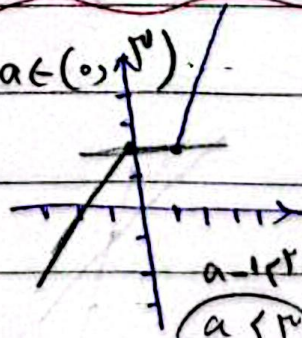
(1), (2): $a \in (0, \infty)$

$$a > 0$$

3

$$a=0 \rightarrow y=-1$$

$$a < 0 \rightarrow \dots$$



در قبل 2 خط به هر دو ...

$$a > 0$$

(1)

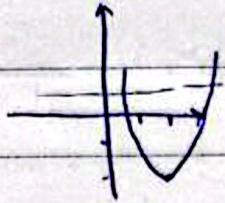
$$(1) y = x^2 + 2 \rightarrow x^2 + 2 = x^2 + 2 \rightarrow x^2 = x^2 \rightarrow x = x$$

$$f^{-1} \rightarrow a = y^2 + 2 \rightarrow y^2 = \sqrt{a-2} \rightarrow y = \sqrt{a-2}$$

3



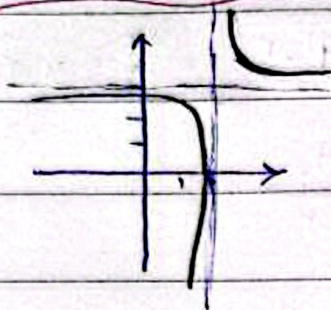
1. ب) $x^2 \in \mathbb{R} \rightarrow$



حل

(2)

4. ا) $\frac{y^2}{x-1}$



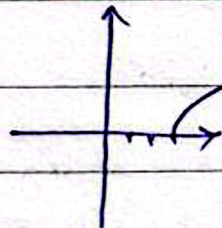
حل

(3)

$\rightarrow x = \frac{y^2}{y-1} \rightarrow xy - y^2 = y^2 - y^2$
 $xy - y^2 = y^2 - y^2$
 $\rightarrow y = \frac{y^2}{x-1}$

8. ب) $\frac{y^2}{x-1} = \frac{y^2}{x-1} \leq 1$ حل

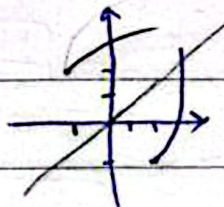
10. ا) $y = \sqrt{x-1}$



حل: $x = y^2 + 1 \rightarrow x^2 = y^2 + 1$
 $y = x^2 + 1$

(4)

13. ب) $x^2 \in \mathbb{R}, x \in [1, \infty)$



حل

حل: $y = 1 + \sqrt{x-1}$

17. $f(x) = x + \sqrt{x} \rightarrow f^{-1}(x) = x + \sqrt{x} + \sqrt{x} + \sqrt{x}$

$(\sqrt{x} + \frac{1}{2})^2$

(5)

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

$y = x + \frac{1}{2} + \frac{1}{2} - \sqrt{x} + \frac{1}{2} \rightarrow y = x + \frac{1}{2} - \sqrt{x} + \frac{1}{2}$

$a=1, b=\frac{1}{2}, c=-\frac{1}{2}$



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

$$p(x) = \frac{x}{\sqrt{x^2 - 2}} \rightarrow p^{-1}(x) = \frac{y}{\sqrt{y^2 - 2}} \quad (*)$$

نقطة: $y = \frac{x_1}{\sqrt{x_1^2 - 2}} \rightarrow y = \frac{x_1^2}{x_1^2 - 2}$

$$y = \frac{x_2}{\sqrt{x_2^2 - 2}} \rightarrow y = \frac{x_2^2}{x_2^2 - 2}$$

$$* \rightarrow \frac{x_1^2}{x_1^2 - 2} = \frac{x_2^2}{x_2^2 - 2} \rightarrow 2x_1^2 = 2x_2^2 \rightarrow x_1^2 = x_2^2$$

$$(-) \rightarrow x_1 = \pm x_2$$

(نقطة/نقطة)

$$\Rightarrow x_1 = x_2 \checkmark$$

$$* \frac{y}{\sqrt{y^2 - 2}} = x \rightarrow \frac{y^2}{y^2 - 2} = x^2 \rightarrow \frac{y^2}{y^2 - 2} = x^2 \rightarrow \frac{y^2}{y^2 - 2} = x^2$$

$$y(x^2 - 1) = 2x^2 \rightarrow y = \frac{2x^2}{x^2 - 1}$$

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

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

$$p^{-1}(x) = \frac{x}{1 + |x|} \rightarrow x = \frac{y}{1 + |y|} \rightarrow x + x|y| = y \rightarrow x|y| - y = -x$$

$$x|y| - y = -x \rightarrow y(x - 1) = -x \rightarrow y = \frac{-x}{x - 1} \quad ; y > 0$$

$$-x|y| - y = -x \rightarrow y(-x - 1) = -x \rightarrow y = \frac{-x}{-x - 1} = \frac{x}{x + 1}$$

$$\Rightarrow f^{-1}(x) = \frac{-x/2}{1 - x/2} = \frac{-x/2}{1 - x/2} = \frac{-x/2}{1 - x/2}$$

$$g^{-1}(x) = \frac{x}{x + 1} \rightarrow g = \frac{x}{x + 1} \rightarrow g^{-1}(x/2) = \frac{(x/2)}{(x/2) + 1} = \frac{x}{x + 2}$$

SUBJECT:

Year: Month: Day:

Page: ()

$$1. \quad x = \sqrt[n]{y-1} \rightarrow x^n = y-1 \rightarrow y = x^n + 1 \Rightarrow g(x) = x^n + 1 \quad (10)$$

$$2. \quad g'(x) \Rightarrow x = \frac{y^n}{n} \Rightarrow \sqrt[n]{y^n} = y \rightarrow x = t^r + t \rightarrow t^r + t - x = 0$$

$$b^c - \varepsilon ac = 1 - (-\varepsilon n) = 1 + \varepsilon n$$

$$4. \quad t = \frac{-1 + \sqrt{1 + \varepsilon n}}{r} \Rightarrow \sqrt[n]{y^n + 1} = \frac{-1 + \sqrt{1 + \varepsilon n}}{r}$$

माना $\sqrt[n]{y^n + 1} = x$

$$6. \quad y^n + 1 = \left(\frac{-1 + \sqrt{1 + \varepsilon n}}{r} \right)^n \Rightarrow y^n = \frac{1 + 1 + \varepsilon n - 2\sqrt{1 + \varepsilon n}}{r^n} \Rightarrow y = \sqrt[n]{\frac{2 + \varepsilon n - 2\sqrt{1 + \varepsilon n}}{r^n}}$$

$$8. \quad = \sqrt[n]{\frac{1}{r^n} + \frac{\varepsilon n}{r^n} - \frac{2\sqrt{1 + \varepsilon n}}{r^n}} \Rightarrow y = \sqrt[n]{\frac{1 + \varepsilon n - 2\sqrt{1 + \varepsilon n}}{r^n}}$$

$$10. \Rightarrow y = \sqrt[n]{\frac{1 + \varepsilon n - 2\sqrt{1 + \varepsilon n}}{r^n}} \Rightarrow g^{-1}(x) \Rightarrow g^{-1}(1/r) = \sqrt[n]{1 - r} = \sqrt[n]{r}$$