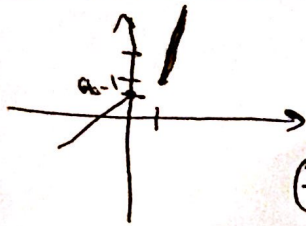


نام و نام خانوادگی (نام خانوادگی) پاسخنامه تشریحی تکلیف شماره ... کلاس B در ...

الف) $\Delta = 1 - 4(2)(1) = 9$
 $n^2 - n - 2 = 0$
 $n = 2$
 1 ± 2
 $n = 2$

ب) $m = 2$
 $a = -1$
 $a^2 = 1$
 $n = 2$



$f(x) = \begin{cases} x-1 & x \geq 1 \\ ax+a-1 & x \leq 1 \end{cases}$

$(-\infty, a-1] \leftarrow ax+a-1$

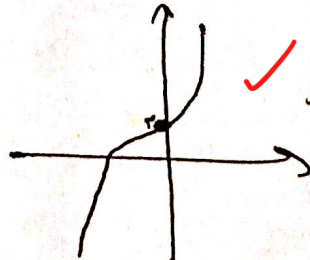
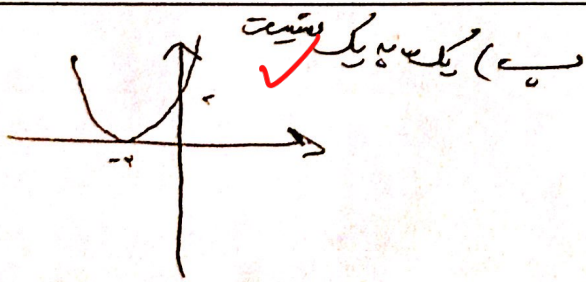
$a-1 < 2$
 $a < 3$

$0 < a < 3$

$x-1 \geq 2 \Rightarrow x \geq 3$

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

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



ضبطه معلوم است
 $\sqrt{x-2}$

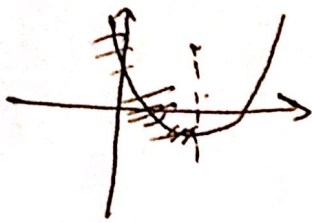
$\frac{f+2y}{y+2} = x$

$xy+2m = f+2y$
 $xy-2y = f-2m$

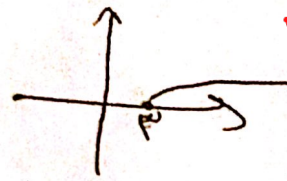
$y = \frac{f-2m}{x-2}$

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

$xy-2y = f-2m$
 $xy-2y = f-2m$
 $y(x-2) = f-2m$
 $y = \frac{f-2m}{x-2}$



✓✓ (ب)



✓✓ (الف)

(2)

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

$$(y-2)^2 = 1 \Rightarrow y-2 = \pm 1 \Rightarrow y = 1 \text{ or } 3$$

$$m = \sqrt{y-2}$$

$$D_f = [0, +\infty)$$

$$m = y-2 \Rightarrow y = m+2$$

$$m + \sqrt{m} = y \Rightarrow y = \sqrt{y} \cdot \sqrt{m}$$

$$m + 1 - m = 0 \Rightarrow \sqrt{y}$$

$$\frac{-1 \pm \sqrt{1+4m}}{2} = \sqrt{y} \quad y = \frac{1 - 2\sqrt{1+4m} + 1 + 4m}{4} = 1 + m - \sqrt{1+4m}$$

$$a \pm b \pm c$$

$$a = \pm b \pm c \Rightarrow \frac{1}{2} \Rightarrow \text{شماره !!}$$

(2.5)

7

$$\frac{m_1}{\sqrt{m_1^2 - 4}} = \frac{m_2}{\sqrt{m_2^2 - 4}} \Rightarrow \frac{m_1^2}{m_1^2 - 4} = \frac{m_2^2}{m_2^2 - 4} \Rightarrow m_1^2 m_2^2 - 4m_1^2 = m_2^2 m_1^2 - 4m_2^2$$

$$m_1^2 = m_2^2 \Rightarrow m_1 = \pm m_2$$

✓ (مربع اول و دوم را از هم جدا می کنیم و به یکدیگر می بینیم)

$$\frac{y}{\sqrt{y^2 - 4}} = m$$

$$m \sqrt{y^2 - 4} = y$$

$$m^2 y^2 - 4m^2 = y^2$$

$$y^2 (1 - m^2) = 4m^2$$

$$y = \sqrt{\frac{4m^2}{1-m^2}}$$

(2)

1

$$g'(a) \Rightarrow y = (a+1)^5$$

$$f' = \frac{a}{1-(a)}$$

$$\left(\frac{-5}{a} + 1\right)^5 + \frac{-5}{1-\frac{-5}{a}} = \frac{9}{5a} + \frac{-5}{5} = \frac{2a-5}{5a} = \frac{2a-5}{5a}$$

(2)

9

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

$$g(a) = f(a) + \sqrt{f(a)} \Rightarrow g^{-1}(a) = \frac{1 + \sqrt{f(a)} - \sqrt{f(f(a))} + 1}{2}$$

(2.5)

10

$$\frac{1 + 2a^2 + 2 - \sqrt{4a^2 + 4 + 1}}{2}$$

X

$$f(x) = x + \sqrt{x} = \left(\sqrt{x} + \frac{1}{r}\right)^r - \frac{1}{r} \rightarrow f^{-1}(x) = \left(\sqrt{x + \frac{1}{r}} + \frac{1}{r}\right)^r \quad (V)$$

$$f^{-1}(x) = x + \frac{1}{r} - \sqrt{x + \frac{1}{r}} \quad \left\{ \begin{array}{l} a = 1 \\ b = \frac{1}{r} \\ c = -\frac{1}{r} \end{array} \right. \rightarrow a+b+c = 1$$

$$g^{-1}(12) = a \rightarrow g(a) = 12$$

10

$$f(a) + \sqrt{f(a)} = 12 \rightarrow f(a) = 9$$

$$\xrightarrow{*} n^{r+1} = 9 \rightarrow \underline{n = 3}$$

$$* f^{-1}(x) = \sqrt[r]{x-1} \quad f(a) = n^{r+1}$$