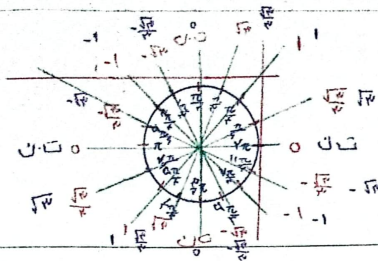


نام و نام خانوادگی ..... مشخصه (مادر) ..... پاسخنامه تشریحی تکلیف شماره ۲... کلاس ... پایه دهم ریاضی ... A



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الف)  $\frac{1}{\sqrt{2}} + (-1) + \sqrt{2}(-1) = \frac{1}{\sqrt{2}} - 1 - \sqrt{2} = -\frac{\sqrt{2}}{\sqrt{2}}$

ب)  $-\frac{\sqrt{2}}{\sqrt{2}} + \frac{\sqrt{2}}{\sqrt{2}} - \sqrt{2}(-\frac{\sqrt{2}}{\sqrt{2}}) = \frac{\sqrt{2}}{\sqrt{2}} \sqrt{2}$

ج)  $-\frac{\sqrt{2}}{\sqrt{2}} + \sqrt{2}(\frac{\sqrt{2}}{\sqrt{2}}) - \sqrt{2}(-\frac{\sqrt{2}}{\sqrt{2}}) = -\frac{\sqrt{2}}{\sqrt{2}} + \sqrt{2} + \frac{\sqrt{2}}{\sqrt{2}} \sqrt{2} = \frac{\sqrt{2}}{\sqrt{2}} \sqrt{2}$

د)  $1 + 1 = 2$

$x = a \rightarrow a + f(a) = f(a) + a + f$   
 $a + a - f = 0 \rightarrow \begin{cases} a = -\sqrt{2} \\ a = +1 \end{cases}$

$f(x) = \begin{cases} x^2 + x & x \geq 1 \\ \sqrt{x} + \sqrt{x} & x < 1 \end{cases}$        $f(1) = f(1) + \sqrt{2} = \sqrt{2}$

$x+1 \geq \sqrt{2} \rightarrow x \geq 1$

$x+1 \leq \sqrt{2} \rightarrow x \leq -\sqrt{2}$

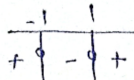
$f(x) = \begin{cases} x^2 - b & x \geq 1 \\ \sqrt{x} - b & x \leq -\sqrt{2} \\ a + \sqrt{x} & -\sqrt{2} \leq x \leq 1 \end{cases}$        $\xrightarrow{x=-\sqrt{2}} \sqrt{(-\sqrt{2})} - b = a + \sqrt{2}$   
 $1 - b = a - \sqrt{2} \rightarrow a + b = \sqrt{2}$

الف)  $\mathbb{R} - \{0, \sqrt{2}\}$        $x^2 - \sqrt{2}x^2 \neq 0$   
 $\sqrt{x(x-\sqrt{2})} \neq 0 \rightarrow \begin{cases} x \neq 0 \\ x \neq \sqrt{2} \end{cases}$

ب)  $\mathbb{R} - \{-\sqrt{2}\}$

$\sqrt{x^2 + \sqrt{2}x^2 + \sqrt{2}x + \sqrt{2}} \neq 0$   
 $x^2 + \sqrt{2}x^2 + \sqrt{2}x + \sqrt{2} \neq 0 \rightarrow (x^2 + \sqrt{2}x^2) + (\sqrt{2}x + \sqrt{2}) \neq 0$   
 $\sqrt{2}(x^2 + x) + (\sqrt{2}x + \sqrt{2}) \neq 0 \rightarrow (\sqrt{2}x + \sqrt{2})(x + 1) \neq 0$

$x \neq \begin{cases} -\sqrt{2} \\ +\sqrt{2} \end{cases}$

الف)  $x^y - 1 \geq 0 \rightarrow (x+1)(x-1) \geq 0$    $(-\infty, -1] \cup [1, \infty)$

$x^y \geq 0 \rightarrow x \geq y$   $(-\infty, -1] \cup [1, \infty) \cap [y, \infty) = [y, \infty)$

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ب)  $y - 1/x \geq 0 \rightarrow y \geq 1/x \rightarrow x \leq y$

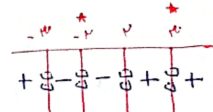
$yx - 1 \geq 0 \rightarrow yx \geq 1 \rightarrow x \geq \frac{1}{y}$   $(-\infty, y] \cap [\frac{1}{y}, \infty) = [\frac{1}{y}, y]$

$q(y) - a = 0 \rightarrow 1y - a = 0 \rightarrow a = 1y$

$b - p(y) = 0 \rightarrow b = y$

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$\frac{b}{a} = \frac{y}{1y} = \frac{1}{y}$

الف)  $\frac{x^y - x - y}{x^y - 1/x + y} \geq 0 \rightarrow (-\infty, -y) \cup (y, \infty) - \{0\}$  

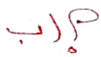
$(x^y)^y - 1/x^y + y \rightarrow (x^y - y)^y - x^y = 0$

$|x^y - y| = |x|$

$x^y - y = x \rightarrow x^y - y - x = 0 \rightarrow y = y$

$x^y - y = -x \rightarrow x^y - y + x = 0 \rightarrow y = y$

8

ب) 

الف)  $y[x] - x \geq 0 \rightarrow y[x] \geq x \rightarrow [x] \geq x/y \rightarrow x \geq y$

ب)  $y[x] - 1 \geq 0 \rightarrow y[x] \geq 1 \rightarrow [x] \geq 1/y \rightarrow x \geq y$

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الف)  $\frac{x+1}{|x-y|} \geq 0$   $x+1 \geq 0 \rightarrow x \geq -1$   $\frac{y-x}{x^y + yx + y} \geq 0$   $y-x \geq 0 \rightarrow y \geq x$

$(-1, \infty) - \{0\}$   $[-1, y] - \{0\}$

$\cap \rightarrow [-1, y] - \{0\}$

10

ب)  $[x] + y \geq 0 \rightarrow [x] \geq -y \rightarrow x \geq -y$

$y - [x] \geq 0 \rightarrow [x] \leq y \rightarrow x < y$

$\cap \rightarrow \emptyset$