

نام و نام خانوادگی
 پاسخنامه تشریحی تکلیف شماره ۱۴ کلاس
 نام و نام خانوادگی
 پاسخنامه تشریحی تکلیف شماره ۱۴ کلاس

$$-\frac{\Delta}{ka} = 1 \rightarrow \frac{ka^2 - b^2}{ka} = 1 \Rightarrow ka^2 - b^2 = ka \quad a = -1$$

$$k \times (-1)^2 - b^2 = -ka \Rightarrow b^2 = 14 \rightarrow b \rightarrow +k$$

$$b \rightarrow -k$$

$$y = -x^2 + kx + k \quad \Delta > 0 \quad \checkmark$$

$$y = -x^2 - kx + k \quad \Delta > 0 \quad \checkmark$$

۱

الف) $x^2 = t \Rightarrow t^2 + 2t + 1 = 0 \Rightarrow \Delta < 0$ ندارد

$$\Rightarrow k - k^2 < 0 \quad \checkmark$$

ب) $(k - x^2) = t \Rightarrow t^2 - 2t - 1 = 0 \Rightarrow (t + 1)(t - 3) = 0 \Rightarrow t < -1$

$$k - x^2 = 0 \Rightarrow x^2 = 1008$$

$$k - x^2 = -1 \Rightarrow x^2 = 1009 \Rightarrow \alpha \begin{cases} +\sqrt{1009} \\ -\sqrt{1009} \end{cases}$$

۲

$$B = \alpha + 1 \quad \alpha + B = 2\alpha + 1 = k = 0 \quad 2\alpha + 1 = 0 \Rightarrow \alpha = -1 \quad B = 0$$

$$S = -\frac{b}{a} \quad \alpha B = \frac{c}{a} \Rightarrow 1 \times 1 = \frac{m}{k} \Rightarrow m = 12$$

$$P = \frac{c}{a} \quad kx^2 - 14x + 1 = 0 \Rightarrow \Delta > 0 \quad \checkmark$$

۳

$$2\alpha - k = B$$

$$\alpha B = \frac{m-1}{k} = 0 \quad m-1 = 0 \Rightarrow m = 1$$

$$\alpha + B = 1 \Rightarrow 2\alpha - k = 1 \Rightarrow 2\alpha = 1 + k \Rightarrow \alpha = \frac{1+k}{2}$$

$$B = 0$$

۴

کافی

$$3x^2 - 4x = 0 \Rightarrow \Delta > 0 \quad \checkmark$$

$$B = \frac{1}{\alpha} \Rightarrow \alpha B = 1$$

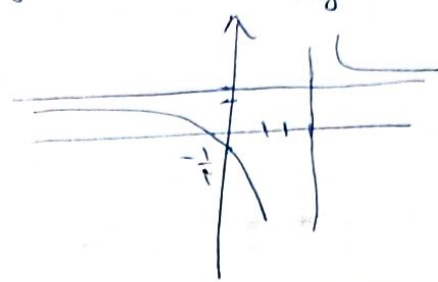
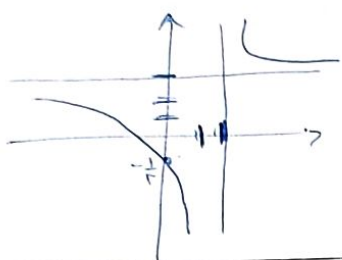
$$\alpha B = 1 \Rightarrow \frac{m^2 - 1}{-m} = 1 \Rightarrow m^2 - 1 = -m \Rightarrow m^2 + m - 1 = 0 \Rightarrow (m-1)(m+1) = 0$$

$$n = 12 \Rightarrow 2x^2 + kx + k - 1 = 0 \Rightarrow 2x^2 + kx + k - 1 = 0 \quad \Delta = 0 \quad \checkmark$$

$$m = 0 \Rightarrow -x^2 + kx + 1 - 1 = 0 \Rightarrow -x^2 + kx = 0 \Rightarrow \Delta > 0 \quad \checkmark$$

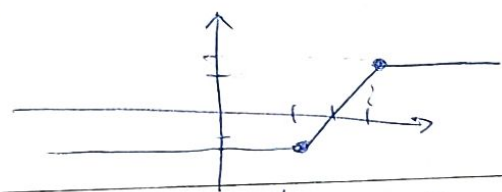
۵

$y = \frac{rx+1}{x-r}$
 $y = \frac{rx+1}{x-r} \Rightarrow yx - ry = rx+1 \Rightarrow x = \frac{-ry-1}{r-y} \Rightarrow y = \frac{rx+1}{x-r}$



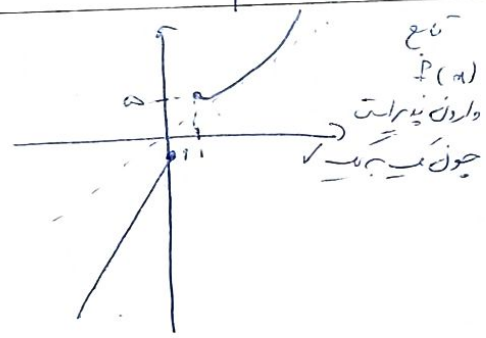
6

$\left\{ \begin{array}{l} x > r \\ 1 \leq x \leq r \\ x < 1 \end{array} \right.$
 $x-1 = x+r_2+r \Rightarrow x = r+1$
 $x-1+x-r = rx-r \Rightarrow x = r$
 $-x+1+x-r = -r \Rightarrow x = r$



$\vec{a} = \vec{r} = [1, r]$ (So, b, a, c)
 $b = r, a = 1$
 $rx - r = y \Rightarrow rx = y + r \Rightarrow x = \frac{y+r}{r}$

7



$x^r + r = y$
 $x = y - r$
 $x = \sqrt[r]{y-r}$
 $y = \sqrt[r]{x-r}$
 $rx - 1 = y$
 $x = \frac{y+1}{r}$

8

$\frac{x^r(x+r) - x^r - 1 - rx^r - r}{x+r} = y \Rightarrow yx + ry = rx+1$
 $\frac{x^r + rx^r - x^r - 1 - rx^r - r}{x+r} = 0$
 $\frac{-r-1}{x+r} = y \Rightarrow y = \frac{-r-1}{x+r}$
 $x = \frac{-ry-1}{r-y}$
 $\frac{-r-1}{x+r} = y \Rightarrow yx + ry = rx+1$
 $\Rightarrow ax = y$
 $\Rightarrow a = \frac{y}{x}$
 $\Rightarrow a = \frac{y}{x} = \frac{y}{\frac{-ry-1}{r-y}} = \frac{y(r-y)}{-ry-1}$

9

$f(x) = \frac{x}{x^r+1} \Rightarrow y(x^r+1) = x \Rightarrow yx^r - x + y = 0 \xrightarrow{\Delta} \Delta = 1 - ry^2$
 $x = \frac{1 \pm \sqrt{1-ry^2}}{ry} \Rightarrow 1 - ry^2 \geq 0 \Rightarrow ry^2 \leq 1 \Rightarrow -\frac{1}{r} \leq y \leq \frac{1}{r}$
 $f(x)^{-1} = \frac{x^r+1}{x} \Rightarrow f(x)^{-1} = \frac{1+\sqrt{1-ry^2}}{ry} \Rightarrow x \in [-\frac{1}{r}, \frac{1}{r}], x \neq 0$

10