

الف) $x^p = y + \delta \Rightarrow x = \sqrt[p]{y + \delta} \Rightarrow y + \delta \geq 0 \Rightarrow y \geq -\delta \Rightarrow R_f = [-\delta, +\infty)$ (سوال ۱)

ب) $x^p = y - 1 \Rightarrow x = \sqrt[p]{y - 1} \Rightarrow R_f = [1, +\infty)$

سوال ۲

الف) $y = (x - p)^p + p \Rightarrow (x - p)^p = y - p \Rightarrow x - p = \sqrt[p]{y - p} \Rightarrow x = \sqrt[p]{y - p} + p$
 $y - p \geq 0 \Rightarrow y \geq p \Rightarrow R_f = [p, +\infty)$

ب) $y = (x - \frac{\delta}{p}) \cdot \frac{p}{p} \Rightarrow y = (x^p - \delta x + \frac{p\delta}{p}) \cdot \frac{p}{p} \Rightarrow y = (x - \frac{\delta}{p})^p - \frac{p}{p}$

$x - \frac{\delta}{p} = \sqrt[p]{y + \frac{p}{p}} \Rightarrow y + \frac{p}{p} \geq 0 \Rightarrow y \geq -\frac{p}{p} \Rightarrow R_f = [-\frac{p}{p}, +\infty)$

الف) $yx^p - px = x^p + w \Rightarrow yx^p - x^p = px + w \Rightarrow x^p(y - 1) = px + w$ (سوال ۳)

$x^p = \frac{px + w}{y - 1} \Rightarrow x = \sqrt[p]{\frac{px + w}{y - 1}} \Rightarrow \frac{px + w}{y - 1} \geq 0 \Rightarrow \frac{-w}{p} \leq \frac{1}{y - 1}$

$\Rightarrow R_f = (-\infty, -\frac{1}{p}] \cup (1, +\infty)$

ب) $y|x| - px = p|x| + 1 \Rightarrow y|x| - p|x| = px + 1 \Rightarrow |x|(y - p) = px + 1$

$|x| = \frac{px + 1}{y - p} \Rightarrow \frac{-1}{p} \leq \frac{1}{y - p} \Rightarrow R_f = (-\infty, -\frac{1}{p}] \cup (p, +\infty)$

$px + 1 \geq 0 \Rightarrow x \geq -\frac{1}{p}$

بسطه‌های شغرتی

$$y^k - ky = 1 \Rightarrow y^k - ky - 1 = 0 \Rightarrow$$

سوال ۱۴

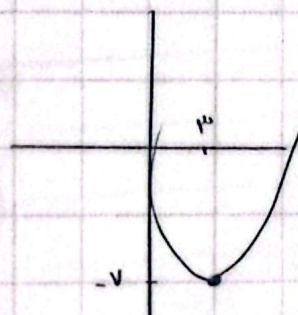
$$\Delta: b^2 - 4ac, (-ky)^k - F(y)(-1) \Rightarrow 14y^k + ky \Rightarrow ky(ky+1) \Rightarrow$$

$$-b \pm \sqrt{\Delta}$$

$$ky \leftarrow R_f = (-\infty, -\frac{1}{k}] \cup (0, +\infty)$$

$$+ \frac{-1}{k} - \frac{0}{k} +$$

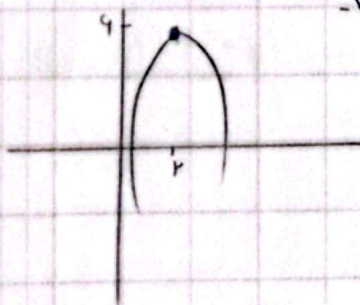
الف) $\left| \begin{array}{l} -\frac{b}{ka} = \frac{q}{v} = 10 \\ -v: 10^k - 4(10) + v = -v \end{array} \right.$



سوال ۱۵

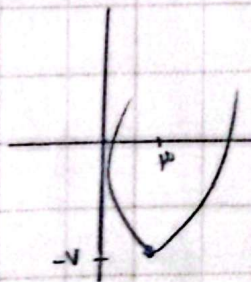
$$R_f = [-v, +\infty)$$

ب) $\left| \begin{array}{l} -\frac{b}{ka} = \frac{-k}{-v} = v \\ -(-k)^k + k(\hat{v}) + v = q \end{array} \right.$



$$R_f = (-\infty, v]$$

الف) $\left| \begin{array}{l} -\frac{b}{ka} = \frac{-(-4)}{v} = 10 \\ 10^k - 4(10) + v = -v \end{array} \right.$

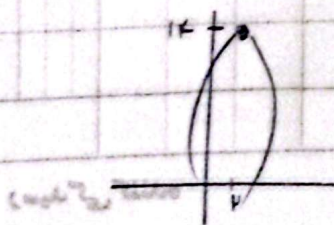


$$R_f = \sqrt{[-v, +\infty)}$$

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

سوال ۱۶

ب) $\left| \begin{array}{l} -\frac{b}{ka} = \frac{-k}{-v} = v \\ -(-k)^k + k(\hat{v}) + 1.0 = 1k \end{array} \right.$



$$R_f \subset \sqrt{(-\infty, 1k]} = R_f = [0, \sqrt{1k}]$$

بسط و کسرهای شصت و پنج

نام: _____
تاریخ: _____

رابطه داده شده

فصل اول و دوم

الف) $R_p = \mathbb{R}$

ب) $\sqrt{x} = [0, +\infty)$

سوال ۷

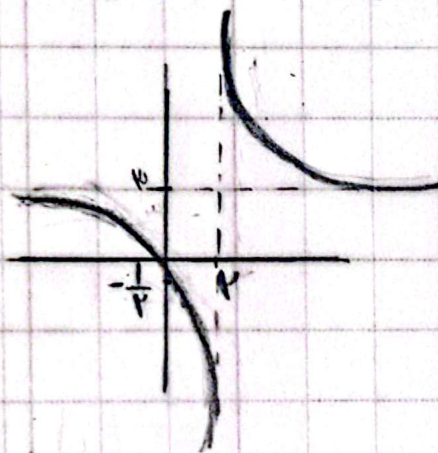
الف) $R_p = \mathbb{R} - \{3\}$

ب) $R_p = \sqrt{x} - \{3\} = [0, +\infty) - \{3\}$

سوال ۹

الف) (۱۰) : جانب افقی

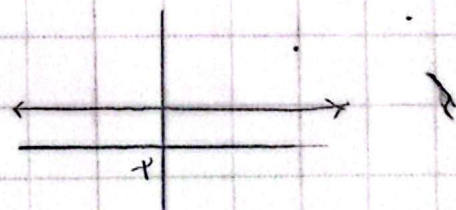
جانب قائم: $y = 2$



$-\frac{1}{2} = 0$

ب) $\frac{-2(-1/2+1)}{1-2/2} = y = 2$

$R_p = \mathbb{R} - \{-1/2\}$



الف) $a + \frac{1}{a} \rightarrow a > 0 \Rightarrow [2, +\infty)$

سوال ۱۰

ب) $\sqrt[n]{\frac{n^2+1}{n}} \Rightarrow \sqrt[n]{\frac{n^2}{n}} = \frac{1}{n} \Rightarrow \sqrt[n]{n + \frac{1}{n^2}} \Rightarrow n = 0$

$R_p = (-\infty, \sqrt[n]{-2}] \cup [\sqrt[n]{2}, +\infty)$ ب: $R_p = [-\infty, -2] \cup [2, +\infty)$