

A

پاسخنامه تشریحی تکلیف شماره 9 کلاس 9

نام و نام خانوادگی: عرفان شیرین

$$\text{الف)} \Rightarrow y = x^2 - 5 \Rightarrow x^2 = y + 5 \Rightarrow x = \sqrt{y + 5} \Rightarrow$$

$$R = [-5, +\infty)$$

$$\text{ب)} y = x^3 - 1 \Rightarrow x^3 = y + 1 \Rightarrow x = \sqrt[3]{y + 1} \Rightarrow$$

$$\Rightarrow R = \mathbb{R}$$

$$\text{الف)} y = x^2 - (x + 4) = (x - 2)^2 + 4 \Rightarrow (x - 2)^2 =$$

$$y - 4 \Rightarrow x - 2 = \sqrt{y - 4} \Rightarrow x = \sqrt{y - 4} + 2$$

$$\Rightarrow R = [4, +\infty) \quad \text{ب)} y = x^2 - 5x + 1 = (x - \frac{5}{2})^2 - \frac{21}{4}$$

$$-\frac{21}{4} \Rightarrow (x - \frac{5}{2})^2 = y + \frac{21}{4} \Rightarrow x - \frac{5}{2} = \sqrt{y + \frac{21}{4}} \Rightarrow x = \sqrt{y + \frac{21}{4}} + \frac{5}{2}$$

$$\Rightarrow R = [-\frac{21}{4}, +\infty)$$

$$\text{الف)} x^2 y - 2y = x^2 + 3 \Rightarrow x^2 y - x^2 = 2y + 3 \Rightarrow x^2 = \frac{2y + 3}{y - 1}$$

$$\Rightarrow x = \sqrt{\frac{2y + 3}{y - 1}} \Rightarrow \frac{-\frac{3}{2}}{+\frac{1}{2} - \frac{1}{2} +} \Rightarrow R = \mathbb{R} - (-\frac{3}{2}, 1]$$

$$\text{ب)} \ln |y - 2y| = 2 \ln |x + 1| \Rightarrow \ln |y - 2y| = 2 \ln |x + 1| \Rightarrow |x + 1| = \sqrt{\frac{y + 1}{y - 2}}$$

$$\Rightarrow \frac{-\frac{1}{2}}{+\frac{1}{2} - \frac{1}{2} +} \Rightarrow R = (-\infty, -\frac{1}{2}] \cup (2, +\infty)$$

$$y = \frac{1}{x^2 - 2x} \Rightarrow x^2 y - 2xy = 1 \Rightarrow x^2 y - 2xy - 1 = 0$$

$$\Rightarrow (x - 2)y = 2y + 1 \Rightarrow |x - 2| = \frac{2y + 1}{y} \Rightarrow x - 2 = \sqrt{\frac{2y + 1}{y}}$$

$$\Rightarrow x = \sqrt{\frac{2y + 1}{y}} + 2 \Rightarrow \frac{-\frac{1}{2}}{+\frac{1}{2} - \frac{1}{2} +} \Rightarrow R = \mathbb{R} - (-\frac{1}{2}, 0]$$

$$\text{الف)} \min \left| \frac{-b}{2a} = \frac{4}{2} = 2 \right| \Rightarrow R = [-2, +\infty)$$

$$9 - 4 + 1 = -4$$

$$\text{ب)} \max \left| \frac{-b}{2a} = \frac{-4}{-2} = 2 \right| \Rightarrow R = (-\infty, 4]$$

$$-4 + 4 + 1 = 1$$

الف) $\min \left| \begin{array}{l} \frac{-b}{2a} = \frac{-9}{2} = -4.5 \\ 9 - 18 + 2 = -7 \end{array} \right. \Rightarrow [-4.5, +\infty) \xrightarrow{\text{زیرادکال می رود}} [0, +\infty)$

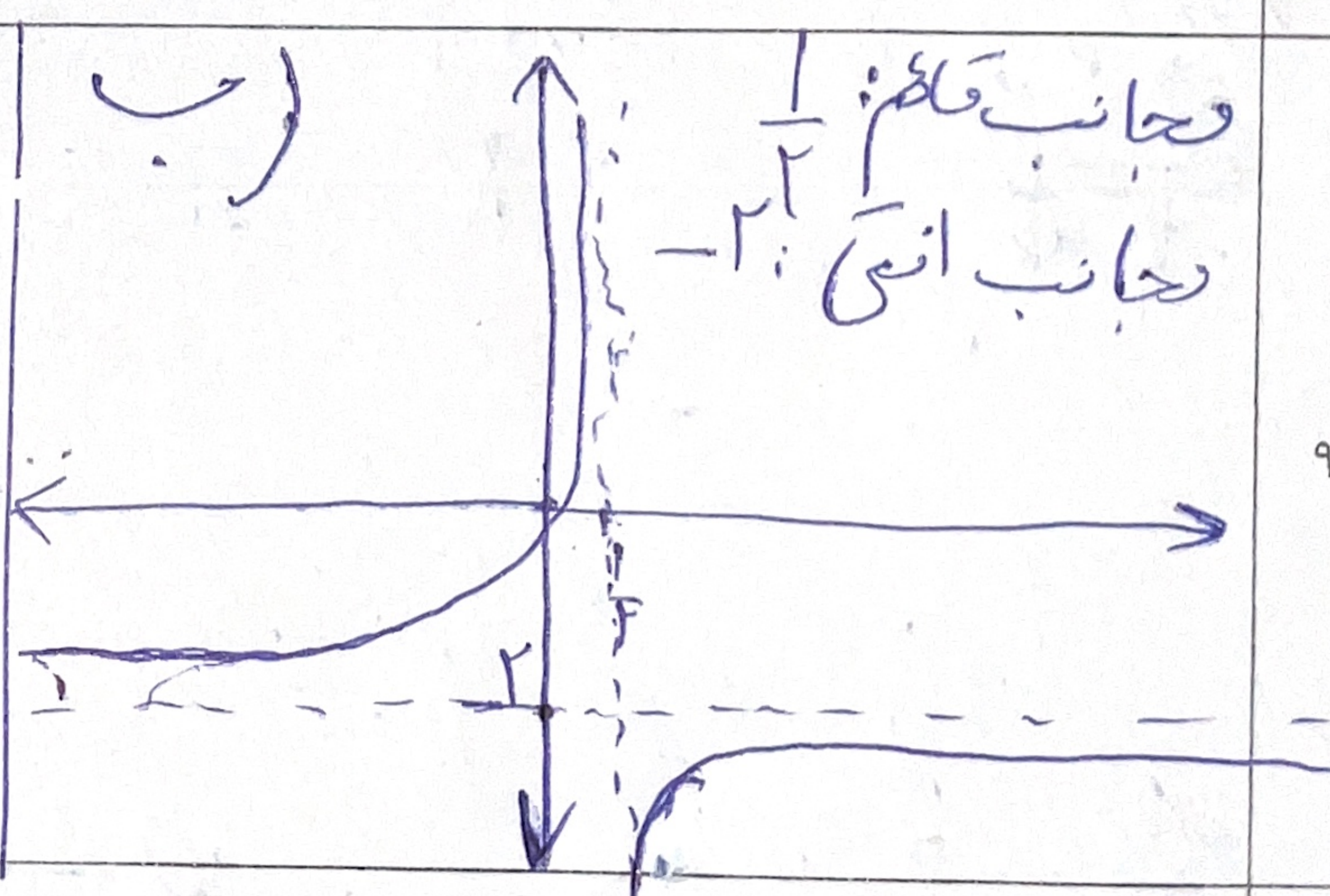
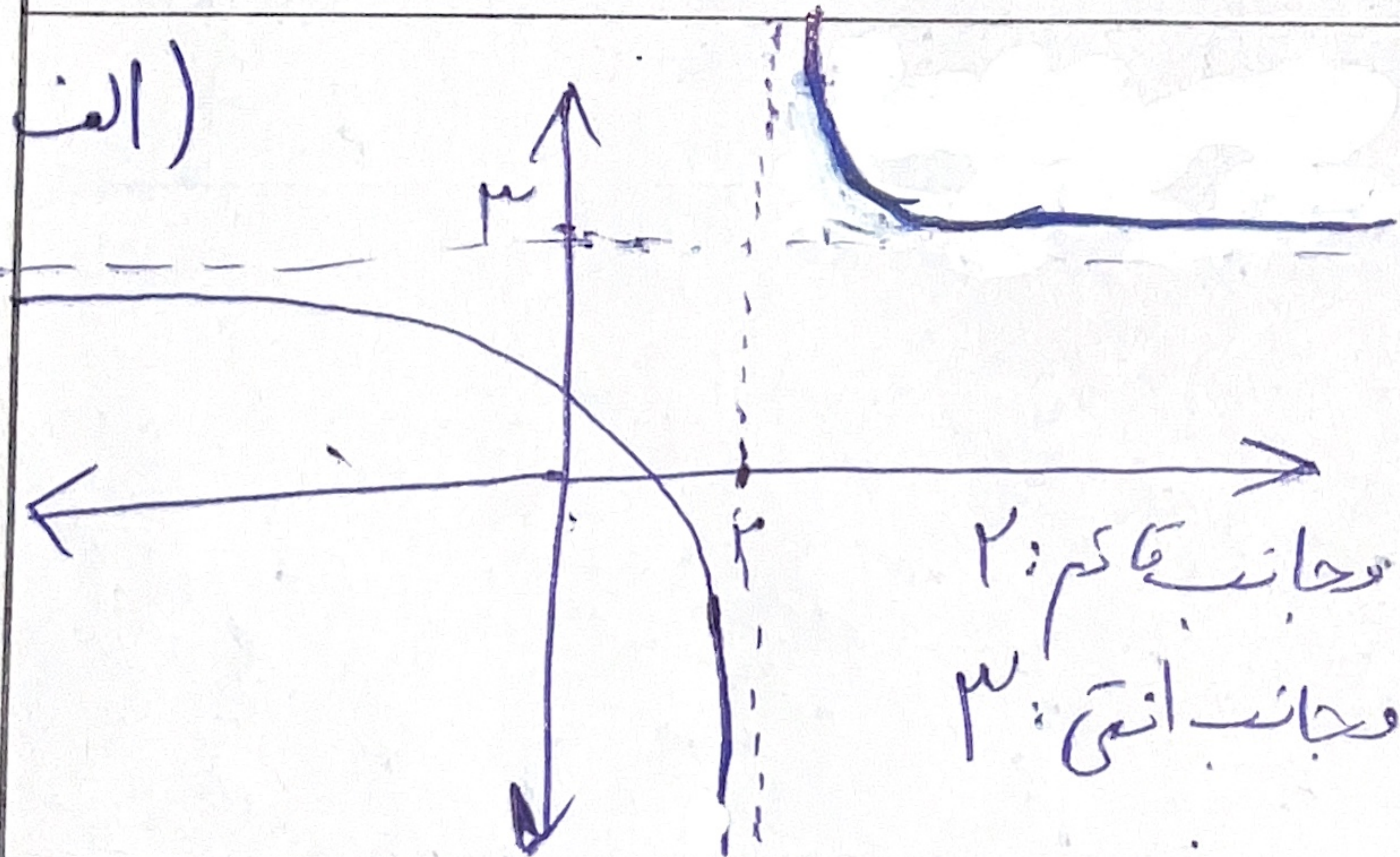
ب) $\max \left| \begin{array}{l} \frac{-b}{2a} = \frac{-4}{-2} = 2 \\ -4 + 8 + 10 = 14 \end{array} \right. \Rightarrow (-\infty, 2] \xrightarrow{\text{زیرادکال می رود}} [14, +\infty)$

الف) $\Rightarrow R = \mathbb{R}$ (میزدین توان نزاد است)

ب) $\Rightarrow R = [0, +\infty)$ (میزدین توان نزاد است و زیر رادکال است پس مثبت رادکال بر آن انجام می شود)

الف) $\Rightarrow R = \{3\}$

ب) $\Rightarrow R = \{2\}$



الف) $\cos^2 x > 0 \Rightarrow R = [0, +\infty)$

ب) $= \sqrt[3]{x} + \frac{1}{x}$ و $x > 0$ or $x < 0$
 $\Rightarrow (-\infty, 2] \cup [2, +\infty) \xrightarrow{\text{زیرادکال می رود}} R = (-\infty, \sqrt[3]{2} - 2]$
 $\cup [\sqrt[3]{2}, +\infty)$