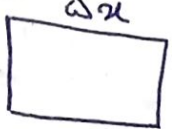
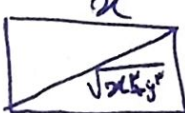


①  $\rightarrow \frac{\Delta x + b}{4x} = \frac{\sqrt{\Delta} + 1}{2} \rightarrow 10x + 2b = 4\sqrt{\Delta}x + 4x$
 $(\Delta + 2\sqrt{\Delta} - 3)x \times 4x \leftarrow b = (2\sqrt{\Delta} - 3)x \leftarrow 2b = (4\sqrt{\Delta} - 6)x$

$$\frac{(\Delta + 2\sqrt{\Delta} - 3)x \times 4x}{\Delta x \times 4x} = \boxed{\frac{(2 + 2\sqrt{\Delta})}{\Delta}}$$

②  $\rightarrow \frac{\sqrt{x^2 + y^2}}{x} = \frac{\sqrt{\Delta} + 1}{2}$
 $2\sqrt{x^2 + y^2} = (\sqrt{\Delta} + 1)x$
 $\rightarrow \sqrt{x^2 + y^2} = \frac{(\sqrt{\Delta} + 1)x}{2} \rightarrow x^2 + y^2 = \frac{(4 + 2\sqrt{\Delta})x^2}{4}$
 $(2 + 2\sqrt{\Delta})x^2 = 4y^2 \leftarrow (4 + 2\sqrt{\Delta})x^2 = 4x^2 + 4y^2$
 $\rightarrow x^2 = \left(\frac{4}{2 + 2\sqrt{\Delta}}\right)y^2 \rightarrow \boxed{\frac{x^2}{y^2} = \frac{2}{1 + \sqrt{\Delta}}}$

③ $\sqrt{2a^2 + 4a} = 2 - 3a \rightarrow 2a^2 + 4a = 9a^2 - 12a + 4$
 $7a^2 - 16a + 4 = 0 \rightarrow a^2 - 14a + 2a = 0 \rightarrow a = \frac{14}{7}, \frac{2}{7}$
 $(a - 2)(a - 1) = 0$
 $\frac{a+1}{a} = \frac{\frac{2}{7}}{\frac{14}{7}} = \boxed{\frac{1}{7} = \frac{1}{\Delta}}$

④
$$\frac{((\sqrt{x+1})(3 - \sqrt{x-1})) - (\sqrt{x+1}(3 + \sqrt{x-1}))}{10 - x} = \sqrt{x-1} \rightarrow x \neq 1$$

$$\frac{(\sqrt{x+1})(-2\sqrt{x-1})}{10 - x} = \sqrt{x-1} \rightarrow -2\sqrt{x+1} = 10 - x$$

 $4x + 4 = x^2 - 20x + 100$
 $x^2 - 24x + 96 = 0 \rightarrow \Delta = \frac{24^2 - 4 \times 96}{4} = \frac{144 - 384}{4} = \frac{-240}{4} = -60$
 $\Delta = \frac{24 \pm 1\sqrt{3}}{2} = 12 \pm \sqrt{3}$
 ۲ ریشه ی مثبت

⑤ $\frac{1}{t+2} - \frac{1}{2-t} = \frac{t^2}{\Delta t} \rightarrow \frac{2-t-2-t}{2-t^2} = \frac{t}{\Delta}$
 $\frac{-2t}{2-t^2} = \frac{t}{\Delta} \rightarrow 2t - t^3 = -10t \rightarrow t^3 - 12t = 0$
 $t=0 \quad t(t^2-12)=0$
 $t = \sqrt{12}$
 $x = -12$
 $x = 2$

9) $\frac{x^2 - 2x + 1 + x^2}{(\underbrace{x(1-x)})^2} = \frac{2x^2 - 2x + 1}{(x(x-1))^2} = \frac{2(x^2 - x) + 1}{(x^2 - x)^2} = \frac{140}{9}$

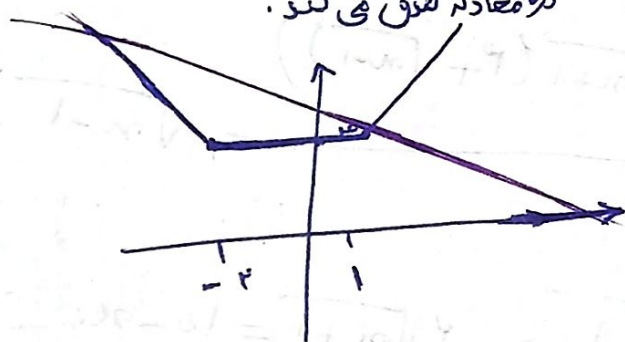
$\leftarrow x^2 - x = t \quad \leftarrow$

$\frac{2t + 1}{t^2} = \frac{140}{9} \rightarrow 140t^2 - 18t - 9 = 0 \rightarrow t = \frac{18 \pm \sqrt{90144}}{2 \times 140}$

$\leftarrow$ برای t دو مقدار بدست می آید که اگر بخواهیم مجموعی نسبت حار بدست آوریم نیاز به حل معادله

نسبت بلکه $2\left(\frac{-b}{a}\right) = 2 \times (1) = 2$

⑤ $-x^2 + 4x - 1 \geq 0 \rightarrow -(x-2)(x-4) \geq 0 \rightarrow x \in [2, 4]$
 $-x^3 + 4x^2 + 25x - 100 \geq 0$ از ریشه ی بالا
 فقط $x=4$
 در تمام معادله صحت می کند.



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

$$9n + 1 = -n + 14$$

$$V_m = 1 \text{ f}$$

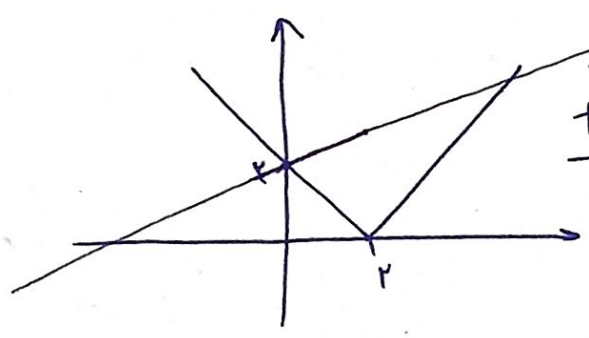
$\hookrightarrow \boxed{x = 2} \quad \& \quad \boxed{y = a}$

$$-2x - 1 = -\frac{1}{2}x + \frac{11}{2} \rightarrow \boxed{x = -2} \quad \boxed{y = 5}$$

$$\sqrt{9^2 + 1^2} = 1\sqrt{10}$$

9

$$\sqrt{(x-r)^2} = |x-r| \rightarrow \frac{1}{r} x + r = |x-r|$$



$$\begin{array}{r} +r \\ +0 \\ \hline \frac{r}{r} \end{array} \begin{array}{l} (0, r) \\ (r, 0) \\ (r, r) \end{array} \begin{array}{r} +0 \\ +1r \\ \hline \frac{1r}{r} \end{array}$$

$$\frac{1}{r} x + r = x - r \rightarrow \boxed{x = 1}$$

$$\frac{r \cdot 1 - r}{r} = \boxed{1}$$

10

$$\frac{1}{h} + \frac{1}{h+9} = \frac{1}{r_0} \rightarrow \frac{r_0 h + 9}{h(h+9)} = \frac{1}{r_0} \rightarrow r_0 h + 1 \cdot 9 = h^2 + 9h$$

$$h^2 - r_0 h - 1 \cdot 9 = 0$$

$$\boxed{h = 9} \leftarrow (h - 9)(h + 9) = 0$$