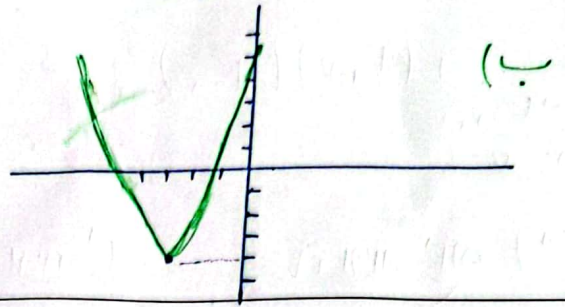


$$\left| \begin{array}{l} \frac{-b}{2a} \Rightarrow \frac{-4}{2} = -2 \\ \frac{-\Delta}{4a} \Rightarrow \frac{-(16-12)}{4} = \frac{-4}{4} = -1 \end{array} \right.$$

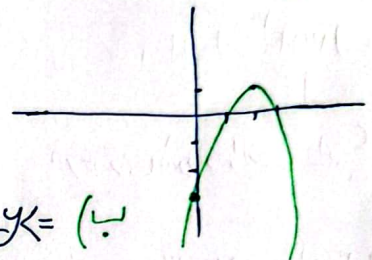
الف) ضریب مثبت است پس min دارد.



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$$\left| \begin{array}{l} \frac{-b}{2a} \Rightarrow \frac{-4}{-2} = 2 \\ \frac{-\Delta}{4a} \Rightarrow \frac{-(16-12)}{-4} = \frac{-4}{-4} = 1 \end{array} \right.$$

الف) ضریب منفی است پس max دارد.



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$$-x^2 + 4x - 3 = 0 \quad \Delta = 4 \quad \frac{-4 \pm \sqrt{4}}{-2} \Rightarrow \begin{array}{l} x = 3 \\ x = 1 \end{array} \quad 0 = y = \text{ب.}$$

$$\Delta = b^2 - 4ac \Rightarrow 9 - 1a \Rightarrow a < \frac{9}{1} \quad a = \frac{1}{1} \leq \frac{1}{1}, \dots$$

الف) $\Delta > 0 \Rightarrow$

$$9 - 1a = 0 \Rightarrow a = \frac{9}{1}$$

ب) $\Delta = 0 \Rightarrow$

$$9 - 1a < 0 \Rightarrow a > \frac{9}{1} \quad \frac{1}{1} < \frac{11}{1}$$

ج) $\Delta < 0 \Rightarrow$

$$9 - 1a \geq 0 \Rightarrow a \leq \frac{9}{1} \quad \frac{9}{1} \leq \frac{1}{1} \leq \frac{1}{1}$$

د) $\Delta = 0, \Delta > 0$

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$$\text{الف) } x^2 - 2x - 1 = x^2 - 2x + 1 - 2 \Rightarrow x^2 - 2x + 1 = +2 = (x-1)^2 = 2$$

$$\Rightarrow x-1 = \pm \sqrt{2} \Rightarrow x = 1 \pm \sqrt{2} \Rightarrow x < \frac{1+\sqrt{2}}{1-\sqrt{2}}$$

$$\text{ب) } x^2 - x - 1 \Rightarrow x^2 - x + \frac{1}{4} - 1 - \frac{1}{4} = 0 \Rightarrow x^2 - x + \frac{1}{4} = \frac{1}{4} \Rightarrow \left(x - \frac{1}{2}\right)^2 = \frac{1}{4}$$

$$\Rightarrow x - \frac{1}{2} = \pm \sqrt{\frac{1}{4}} \Rightarrow x \geq \frac{1}{2} + \sqrt{\frac{1}{4}} \quad \frac{1}{2} - \sqrt{\frac{1}{4}}$$

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$$\text{الف) } \Delta = 4 - (-4) = 8 \rightarrow \frac{+2 \pm \sqrt{8}}{2} = \frac{2 + 2\sqrt{2}}{2} = \frac{2(1+\sqrt{2})}{2} = 1 + \sqrt{2}$$

$$\frac{-b \pm \sqrt{\Delta}}{2a} \rightarrow \frac{+2 - \sqrt{8}}{2} = \frac{2 - 2\sqrt{2}}{2} = \frac{2(1-\sqrt{2})}{2} = 1 - \sqrt{2}$$

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$$\text{ب) } \Delta = 1 - (-14) = 15 \rightarrow \frac{-1 \pm \sqrt{15}}{2}$$

الف) $(u-v)(u-4)$ $\rightarrow 4$
 $-11 = -v - 4$
 $u = -v - 4$

ب) $(u+v)(u-4)$ $\rightarrow -v$
 $-21 = -4 \times v$
 $3 = v - 4$

الف) $5u^2 - 12u + v = 0 \Rightarrow u^2 - 12u + 35 = 0 \xrightarrow{\text{مقسمه}} (u-v)(u-5)$

ب) $3u^2 - 10u + v = 0 \Rightarrow u^2 - 10u + 21 = 0 \xrightarrow{\text{مقسمه}} (u-v)(u-3)$
 $\frac{v}{5} = 1$
 $\frac{v}{3} = 1$

لنستمر دانيجا جميع ضرایب نیز مندرجی است و ضرایب $\frac{c}{a}$ بودند

الف) $2u^2 - 5u + 3 = 0$ جمع ضرایب منفرجه $\rightarrow \frac{c}{a} = \frac{3}{2}$
 ب) $2u^2 + 5u + 3 = 0$ مع $b=c, a$ $\rightarrow -1$
 ج) $\Delta = 25 - 12 = 13 \rightarrow \frac{+5 + \sqrt{13}}{2}$
 $\frac{+5 - \sqrt{13}}{2}$

$\Delta = 49 - 144 = -$
 جواب ندارد

الف) $3^2 - (2 \times (-2)) = 13$

$P = \frac{c}{a} = -2$ $S = \frac{-b}{a} = 3$

ب) $3^3 - (3 \times 3 \times (-2)) = 45$

الف) $\left| \frac{1 \times 2 \times 3 \times 4 \times 5 \times 6 \times 7}{1 \times 2 \times 3 \times 4 \times 5 \times 6 \times 7} \right| + \left(\frac{7 \times 1}{2} \right) = (3 \times 7) + (9 \times 2) = 27$

ب) $\left(\frac{9 \times 1 \times 7}{1 \times 2 \times 3} \right) - \left(\frac{7 \times 1}{2} \right) = 14 - 7 = 7$