

1915

تالیف ۲۴

دهم فصل

در سالی جوانی

سؤال ۱

الف $a > 0 \rightarrow$ سهمی min دار

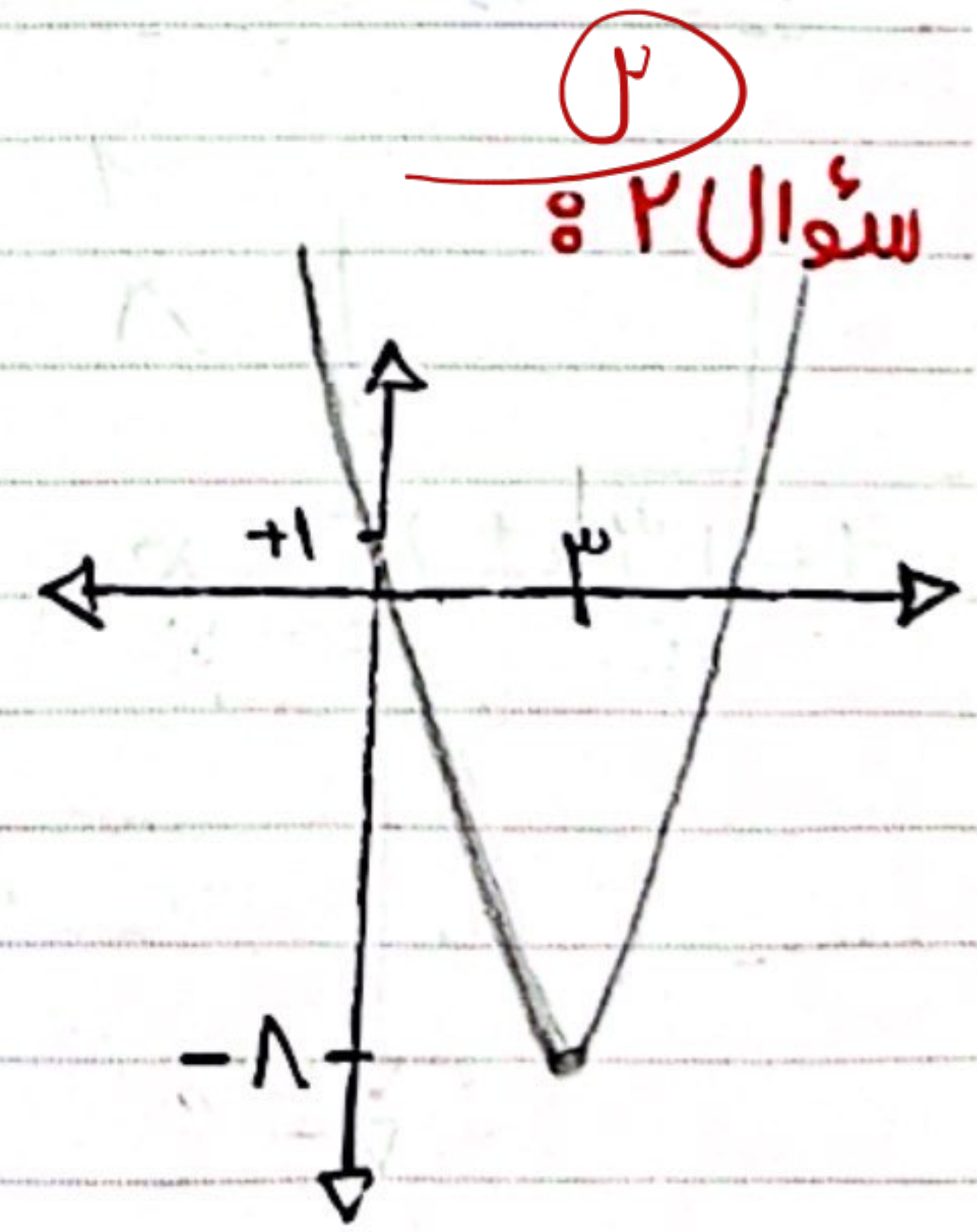
$$\text{ext} \begin{cases} x_S = \frac{-b}{2a} = \frac{+4}{2} = +1 \\ y_S = 2(1)^2 - 4(1) + 1 = 2 - 4 + 1 = -1 \end{cases} \Rightarrow (1, -1)$$

ب $a < 0 \rightarrow$ سهمی max دار

$$\text{ext} \begin{cases} x_S = \frac{-b}{2a} = \frac{-4}{-2} = \frac{4}{2} \\ y_S = -2\left(\frac{4}{2}\right)^2 + 4\left(\frac{4}{2}\right) - 5 = \frac{-11}{1} \end{cases} \Rightarrow \left(\frac{4}{2}, \frac{-11}{1}\right)$$

الف $x^2 - 7x + 1 \rightarrow a > 0$ سهمی min دار

$$\text{ext} \begin{cases} x_S = \frac{-b}{2a} = \frac{7}{2} = 3.5 \\ y_S = (3.5)^2 - 7(3.5) + 1 = -11.25 \end{cases}$$

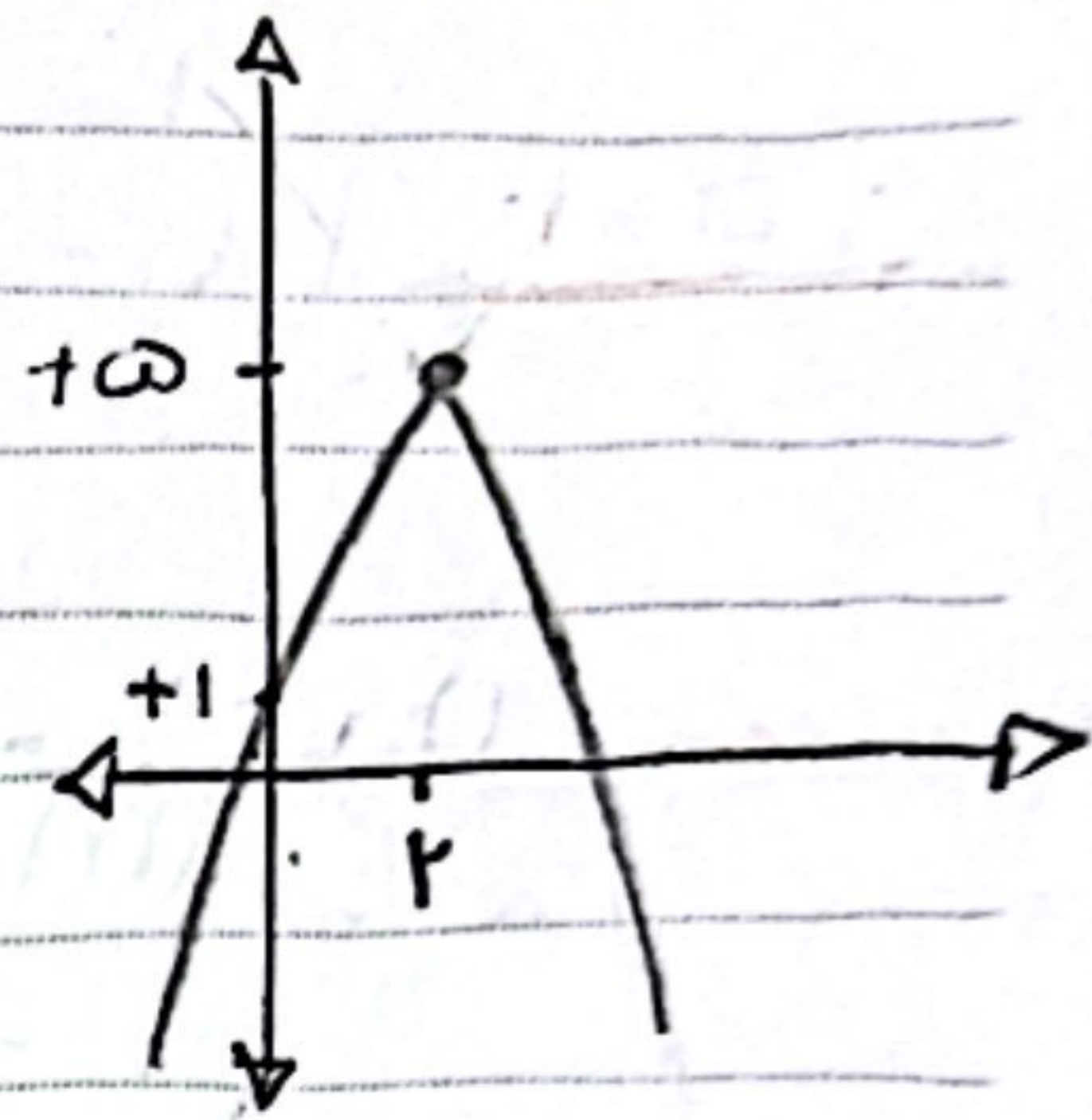


سؤال ۲

ب) $-x^2 + kx + 1 \rightarrow a < 0$ max

ext $\left\{ \begin{aligned} x_s &= \frac{-b}{2a} = \frac{-k}{-2} = \frac{k}{2} \\ \dots \end{aligned} \right.$

$y_s = -(x)^2 + k(x) + 1 = -k + k + 1 = 1$



$S = \alpha + \beta = 1$
 $P = \alpha\beta = -1$
 $x^2 - Sx + P = x^2 - 1x - 1 = kx^2 + kx - 9x - 1 =$

سؤال ۱۳

$\rightarrow x^2 - x = kx^2 + kx - 9x$

$x(x-1) = x(kx + k - 9)$

$x - 1 = kx + k - 9 \rightarrow kx + (k-1)x - 8 = 0$

$\div k \rightarrow x^2 + \left(\frac{k-1}{k}\right)x - 8 = 0 \rightarrow \alpha + \beta = 1$

$\frac{k-1}{k} = -1$

$k-1 = -k$

$k = -1$

$k = 0$

$\sqrt{\alpha} - \sqrt{\beta} = 1 \rightarrow \alpha + \beta - 2\sqrt{\alpha\beta} = 1$

سؤال ۱۴

$\rightarrow 3m - 2\sqrt{m} = 1 \quad \sqrt{m} = t \rightarrow 3t^2 - 2t - 1 = 0$

$t = \frac{2 \pm \sqrt{4 + 12}}{6}$

$\rightarrow t = 1 \rightarrow \sqrt{m} = 1 \rightarrow m = 1$

$\rightarrow t = -\frac{1}{3}$ غلط

$m=1 \rightarrow 2x - x - 1 = 0 \rightarrow$ حاصل‌مقدار $= \frac{c}{a} = \frac{-1}{2}$

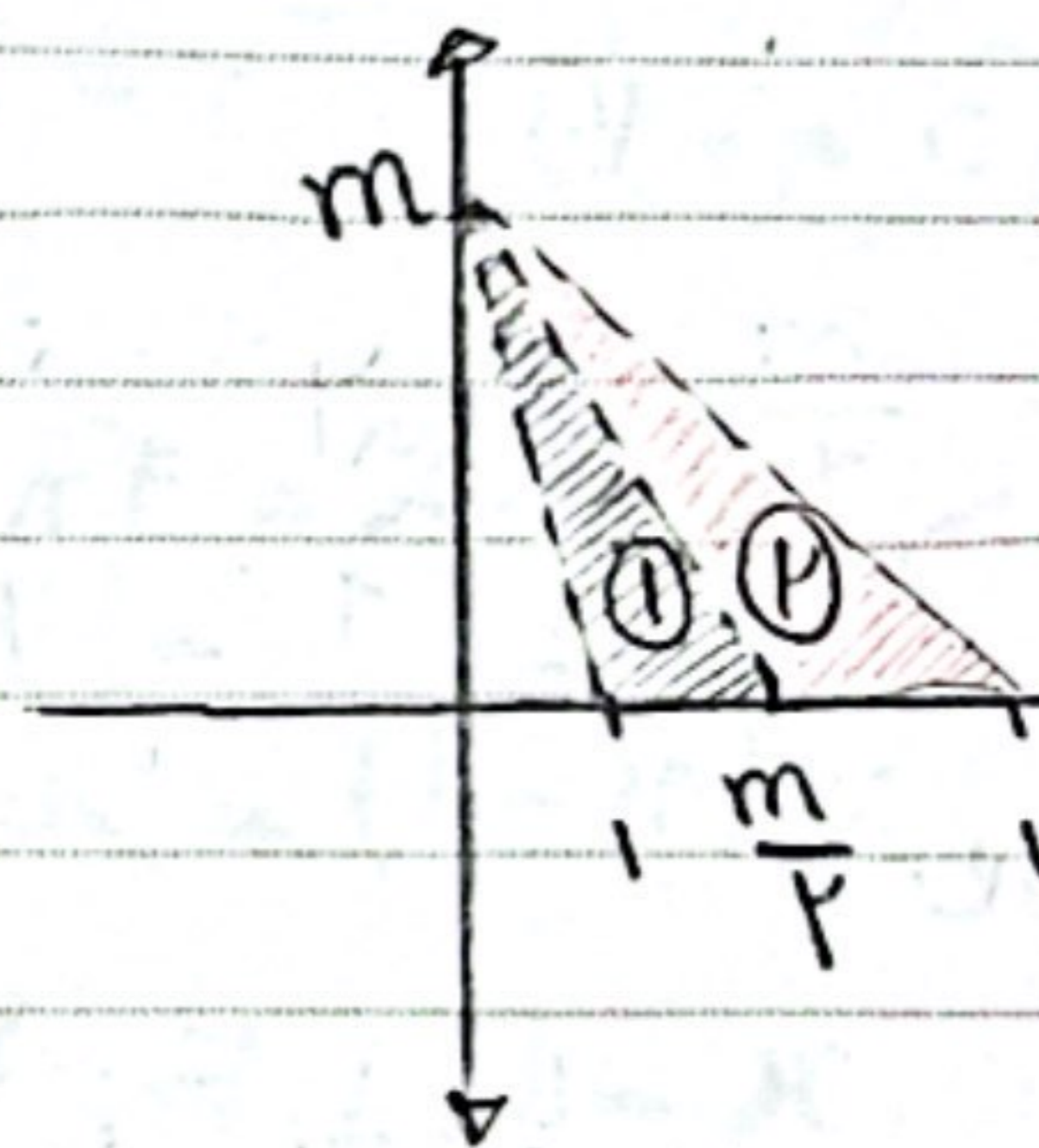
$x = \frac{(m+2) \pm \sqrt{m^2 + 4 + 4m - 4m}}{2}$ سوال ۸

$\rightarrow \frac{(m+2) \pm (m-2)}{2} \rightarrow x = \frac{m}{2}$
 $\rightarrow x = 1$

حالت اول) $\frac{m(\frac{m}{2}-1)}{2} = \frac{1}{2} \cdot \frac{1}{2}$

$\frac{m^2}{2} - m - \frac{1}{2} = 0 \rightarrow m = \frac{1 \pm \sqrt{1+2}}{1}$

$\rightarrow m = 3 / m = -1$



حالت دوم) $\frac{m(1-\frac{m}{2})}{2} = \frac{1}{2} \cdot \frac{1}{2}$

$-\frac{m^2}{2} + m - \frac{1}{2} = 0 \rightarrow \Delta = 1 - 4(\frac{-1}{2})(\frac{-1}{2}) < 0$ اساساً منفرجه

$m \cdot \dot{y} = x^2 - mm + 1$

$\frac{-b}{2a} \rightarrow \frac{m}{2} \rightarrow \left(\frac{3}{2}\right) \text{ و } \left(\frac{-1}{2}\right)$



کنترل مقادیر \rightarrow \min در $\rightarrow a$

سوال ۲

$$x_s = \frac{-b}{ka} = \frac{-1}{ka} \rightarrow y_s = \frac{q}{ka} - \frac{1}{ka} + \frac{ka^2}{ka} =$$

$$\rightarrow y_s = \frac{ka^2 - q}{ka} = \frac{v}{1}$$

$$1 \cdot a = 1 \cdot ka^2 - v \rightarrow ka^2 - va - 1 = 0$$

$$a = \frac{v \pm \sqrt{v^2 + 4k}}{2k} \rightarrow a = 1/a = \frac{-q}{1}$$

مقاله اول $\rightarrow t(t+1) = a$, $a+1 = 1t+1$

سوال ۱۷

مقاله دوم $\rightarrow z(z+1) = b$, $1a+1 = 1z+1$

مبعث حضرت رسول اکرم (ص) (۱۳ سال قبل از هجرت) (تعطیل) - روز بزرگداشت نظامی گنجوی

$$a+1 = 1t+1 \rightarrow t = \frac{a-1}{1} \implies \left(\frac{a-1}{1}\right)\left(\frac{a+1}{1}\right) = a$$

$$\rightarrow (a-1)(a+1) = ka$$

$$a^2 + ka - 1 = ka \rightarrow a^2 - ka - 1 = 0 \rightarrow a = 1$$

$$\rightarrow a = -1 \text{ و } \bar{0}$$

$$1a+1 = 1z+1 \rightarrow z = \frac{1a-1}{1} \rightarrow z = 1$$

$$\rightarrow b = 1 \times 1 = 1$$

روز بزرگداشت شهید (سالروز صدور فرمان حضرت امام خمینی (ره) مبنی بر تأسیس بنیاد شهید انقلاب اسلامی - ۱۳۵۸ ه.ش)

$$\rightarrow 1 \cdot 1 - 1 = 0$$

$$\alpha\beta = \frac{\beta}{\omega\alpha} \rightarrow \omega\alpha\beta = \beta \rightarrow \omega\alpha = 1 \rightarrow \alpha = \frac{1}{\omega}$$

سوال ۱۹

$$\omega\alpha = -1 \rightarrow \alpha = \frac{-1}{\omega}$$

$$\alpha + \beta = \frac{-k}{\omega\alpha} \xrightarrow{\alpha = \frac{1}{\omega}} \frac{1}{\omega} + \beta = \frac{-k}{\omega} \rightarrow \beta = -1$$

چون $\alpha > \beta$ باید از سبب غنق

$$\alpha = \frac{-1}{\omega} \rightarrow \frac{-1}{\omega} + \beta = \frac{k}{\omega} \rightarrow \beta = +1$$

چون $\alpha > \beta$ سبب غنق

$$\alpha = \frac{-1}{\omega} \rightarrow -\omega x^2 + kx + 1 \rightarrow \text{ext} \begin{cases} x_g = \frac{-b}{2a} = \frac{-k}{-10} = \frac{k}{10} \\ y_g = -\frac{1}{10} + \frac{14}{10} + 1 = 1.1 \end{cases}$$

چون $\alpha > \beta$ سبب غنق

چون سبب اول قرار دار.

$$a + b = a^2 + b^2 - 12$$

$$ab = a + b - 1 \rightarrow a + b = ab + 1$$

$$\Rightarrow a^2 + b^2 - 12 = ab + 1$$

$$a^2 + b^2 - ab - 13 = 0 \rightarrow (a+b)^2 - 3ab - 13 = 0$$

$$(a+b)^2 - 3(a+b-1) - 12 = 0$$

$$t = a+b \rightarrow t^2 - 3(t-1) - 12 = 0$$

$$t^2 - 3t - 10 = 0 \rightarrow (t-5)(t+2) = 0$$

$$t = 5 \rightarrow a+b = 5$$

$$t = -2 \rightarrow a+b = -2 \rightarrow \bar{0} \bar{0} \bar{2}$$

$$\text{معادله اول} \rightarrow x_S = \frac{-b}{2a} = \frac{1}{2} \rightarrow y_S = \frac{a+1}{2}$$

سؤال ۱۸

$$\text{معادله دوم} \rightarrow x_S = \frac{1}{2} \rightarrow y_S = \frac{-a-1}{2}$$

$$y = 2bx^2 - bx - 1 \rightarrow \frac{a+1}{2} = 2b\left(\frac{1}{2}\right)^2 - b\left(\frac{1}{2}\right) - 1 = \frac{b}{2} - \frac{b}{2} - 1$$

$$\rightarrow a+1 = -2 \rightarrow \underline{a = -3}$$

$$y = -ax^2 + ax + 2 \rightarrow \frac{-a-1}{2} = a\left(\frac{1}{2}\right)^2 + a\left(\frac{1}{2}\right) + 2$$

$$\rightarrow \frac{-b-1}{2} = \frac{-1}{2} \rightarrow \underline{b = -2}$$

$$b-a = -2+3 = \underline{1}$$