

نام و نام خانوادگی: هراسادات حسین (۱۹) یاسفانه شریعتی ۱۴۰۵ لاس یازدم دخترب

$$y = -x^2 + bx + 3 \rightarrow y_{\max} = 7 \rightarrow 7 = \frac{-(b^2 + 12)}{4(-1)} \rightarrow 28 = b^2 + 12$$

$$-\frac{\Delta}{2a}$$

$$b^2 = 16 \rightarrow \begin{cases} b = -4 \\ b = 4 \end{cases}$$

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الف) $t^2 + 2t + 3 = 0 \rightarrow \Delta = 4 - 12 < 0 \rightarrow \text{ج. ر} = \emptyset$

$$t = x^2$$

ب) $t^2 - 2t - 15 = 0 \rightarrow (t + 3)(t - 5) = 0$

$$t = 5 - x^2$$

$$\begin{cases} \rightarrow t = -3 = -x^2 + 3 \rightarrow x^2 = 6 \rightarrow x = \pm \sqrt{6} \\ \rightarrow t = 5 = -x^2 + 3 \rightarrow x^2 = -2 \end{cases}$$

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$$\alpha = \beta + 2, m = ?, \beta = ?, \alpha = ?$$

$$S = \alpha + \beta = \frac{14}{5} = 2.8$$

$$\Rightarrow S = \beta + \beta + 2 = 4 \rightarrow \beta = 1 \rightarrow \alpha = 3$$

$$P = \alpha\beta = \frac{m}{2}$$

$$P = 1 \times 3 = \frac{m}{2} \rightarrow m = 12$$

$$x^2 - 14x + 12 = 0 \checkmark$$

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$$m = ?$$

$$\alpha + \beta = \frac{4}{2} = 2$$

$$\alpha = 2 - \beta$$

$$2\alpha - \beta = 4 \Rightarrow 2(2 - \beta) - \beta = 4 \Rightarrow -3\beta = 0 \Rightarrow \beta = 0, \alpha = 2$$

$$2\beta = 0 \rightarrow m - 1 = 0 \rightarrow m = 1$$

$$x^2 - 4x = 0 \checkmark$$

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$$\alpha = \frac{1}{\beta} \Rightarrow \alpha\beta = 1$$

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

$$m = 1 \rightarrow x^2 + (m - 1) = 0 \rightarrow \Delta = 1 - 4 < 0 \checkmark$$

$$m = -2 \rightarrow x^2 + 2x + 1 = 0 \rightarrow \Delta = 4 - 4 = 0 \times$$

$$\Rightarrow m = 1$$

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$$\alpha\beta = 3 \rightarrow \alpha = \frac{3}{\beta} \Rightarrow \frac{3}{\beta} \alpha \beta^2 = 3 \rightarrow 3\beta = 3 \rightarrow \beta = 1, \alpha = 3$$

$$d + \beta = m = \frac{5}{\mu} + \frac{9}{2} = \frac{5\mu + 18}{12} = \frac{53}{12} = m$$

$$21 - \frac{4 \times 5}{12} + 1 = 20 \checkmark$$

1, 1, 0, 4

$$\alpha = 3\beta \rightarrow S = \alpha + \beta = 3\beta + \beta = 4\beta = 4 \rightarrow \beta = 1, \alpha = 3$$

$$P = \alpha\beta = 1 \times 3 = 3 = m$$

$$21 - 4 \times 1 + 3 = 20 \checkmark$$

1, 1, 0, 4

$$\alpha + \beta = v$$

$$\alpha\beta = 2 \rightarrow \alpha = \frac{2}{\beta} \rightarrow \alpha^2 + \frac{1}{\alpha^2} = \left(\frac{2}{\beta} + \frac{1}{\alpha} \right) \left(\frac{2}{\beta} - \frac{1}{\alpha} + \frac{2}{\alpha\beta} \right) = v \left((v)^2 - 4 \right) = v \times 4$$

$$v = 3.01$$

1, 5

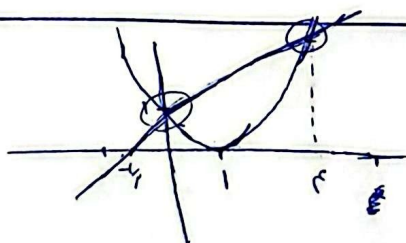
$$h_{max} = ? = \frac{-\Delta}{2a} = \frac{4(200000)}{+40} = 20000 \Rightarrow \text{ارتفاع ماکسیمم}$$

$$h=0 \rightarrow t=? \rightarrow -10t^2 + 400t = 0 \rightarrow 10t(t+40) = 0$$

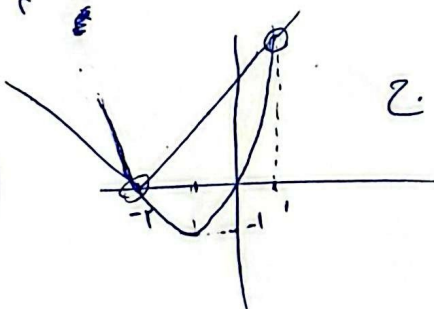
$$t=0 \rightarrow \text{زمانی که توپ به زمین برخورد می کند}$$

4, 5

الف)



$$C = 0, 4$$



$$C = -2, 1$$

$$b) (x+1)^2 - 1 = |x+1|$$

5, 1