

۱. ± 4 (۳)

$$y = -x^2 + bx + c$$

$$m \times y = V \Rightarrow -\frac{\Delta}{4m} = \frac{b^2 + 12}{4} = V \quad \frac{b^2 + 12}{4} = V \quad b^2 + 12 = 4V \quad b^2 = 14 \quad b = \pm 4 \checkmark$$

الف) $f(x) = x^2 + 2x + 2$

(۲) -۲

$$x^2 = t \Rightarrow t^2 + 2t + 2 = 0 \quad \Delta = 4 - 12 = -8 < 0 \Rightarrow \text{فاصله ریشه} \checkmark$$

ب) $f(x) = (x - 2)^2 - 2(x - 2) - 10$

$$(x - 2) = t \Rightarrow t^2 - 2t - 10 = 0 \Rightarrow (t - 5)(t + 3) = 0 \quad t = 5 \quad t - 2 = 5 \Rightarrow x = 7 \quad t = -3 \quad x - 2 = -3 \Rightarrow x = -1 \quad x^2 = V \Rightarrow x = \pm \sqrt{V} \checkmark$$

$$x^2 - 14x + m = 0$$

$$x^2 - 15x + 12 = 0$$

$$x, x + 2 \quad S = -\frac{b}{a} = -\frac{-15}{1} = 15 \quad x^2 - 15x + 12 = (x - 1)(x - 12) \Rightarrow x \begin{cases} 1 \\ 12 \end{cases} \checkmark$$

(۲) -۳

$$x + x + 2 = 2x + 2 = 15 \Rightarrow 2x = 13 \Rightarrow x = \frac{13}{2} \Rightarrow 15 - 14 + m = 0 \Rightarrow m = 1 \checkmark$$

$$x^2 - 4x + m - 1 = 0$$

$$x - B = 1 \Rightarrow x - 2B = 1 \Rightarrow -2B = 1$$

(۲) -۴

$$S = -\frac{b}{a} = 2 \quad x + B = 2 \Rightarrow x + 2B = 2 \Rightarrow x = 2 - 2B \quad B = 0 \Rightarrow x = 2 \quad P = \frac{m - 1}{4} = 0 \Rightarrow m = 1 \checkmark$$

$$x, \frac{1}{x} \quad -mx^2 + 8x + m^2 - 2 = 0$$

$m = 1$ (۲) -۵

$$\Rightarrow P = 1 \Rightarrow P = \frac{m^2 - 2}{-m} = 1 \quad m^2 - 2 = -m \quad m^2 + m - 2 = 0 \quad (m + 2)(m - 1) \Rightarrow m \begin{cases} -2 \\ 1 \end{cases}$$

$$m = 1 \Rightarrow -x^2 + 8x - 1 = 0 \Rightarrow \Delta > 0 \checkmark$$

$$m = -2 \Rightarrow 2x^2 + 8x + 2 = 0 \Rightarrow \Delta = 0 \Rightarrow \text{ریشه ها برابر} \times$$

$$x^2 - mx + 2 = 0 \quad P = 2 \quad m = x + B = \frac{9}{2} + \frac{2}{2} = \frac{11}{2} \Rightarrow \frac{11}{2} \checkmark$$

(۲) -۶

$$x^2 - 8x + m = 0 \quad m = xB = 1 \times 2 = 2 \checkmark$$

(۲) -۷

$$S = x + \frac{1}{x} \quad x = 1 \Rightarrow S = 1 + 1 = 2$$

-1

(2)

$$x^2 - 4x + 4 = 0$$

$$x^2 + \frac{1}{x^2} = ?$$

$$x^2 + \frac{p^2}{x^2} = x^2 + \frac{x^2 B^2}{x^2} = x^2 + B^2 = 5^2 - 4 \cdot 5 \cdot 2 =$$

$$P = \alpha B = 2 \quad x^2 = 1 \Rightarrow$$

$$V^2 - \frac{2 \cdot 2 \cdot 2}{2 \cdot 2} V = \boxed{3-1} \quad \checkmark$$

$$h(t) = -1.6t^2 + 5.6t$$

(2)

-9

$$\max h = \frac{-\Delta}{2a} = \frac{-25.6}{-3.2} = \frac{25.6}{3.2} = \boxed{8} \quad \checkmark$$

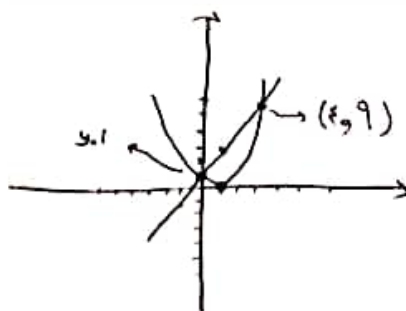
$$-1.6t^2 + 5.6t = 0$$

$$t(-1.6t + 5.6) = 0$$

$t \rightarrow \begin{cases} 0 \rightarrow \text{زمان شروع} \\ \Delta \rightarrow \text{زمان که توپ به ارتفاع 8 متر رسید} \end{cases} \Rightarrow \boxed{8} \quad \checkmark$

$$f(x) = x^2 - 2x + 1 = (x-1)^2$$

$$(2, 1) \quad \leftarrow \frac{-b}{2a} = 1$$



$(0, 1)$
 $(2, 1)$ $\checkmark$

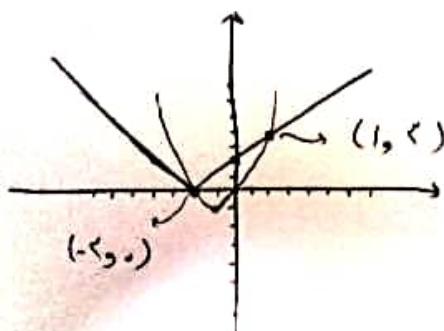
(2)

-1

$$x^2 - 2x = |x-1|$$

$$x(x-2)$$

$$-\frac{b}{2a} = -1$$



$(1, 0)$
 $(0, 0)$ $\checkmark$