

۱۹, ۵

$$\frac{-b^2 - 12}{-4} = 7$$

$$b^2 + 12 = 28 \Rightarrow b^2 = 16$$

$$b = \pm 4 \checkmark$$

۲

۱

$$f(x) = x^2 + 2x + 3 = 0$$

$$\Delta < 0 \Rightarrow \text{بدون جواب} \checkmark$$

$$x^2 - 2x + 15 = 0 \quad (x-5)(x+3)$$

$$x^2 - 2x = -15$$

$$x^2 = -1 \quad \text{جواب ندارد}$$

$$x^2 - 2x = -3$$

$$x^2 = 2x - 3 \Rightarrow x = \pm \sqrt{2} \checkmark$$

۲

۲

$$\alpha + \alpha + 2 = 4 \Rightarrow \alpha = 1$$

$$\alpha + 2 = 3$$

$$\frac{m}{2} = 1 \times 3 \Rightarrow m = 12 \checkmark$$

۲

۳

$$\frac{3}{4}(\alpha + \beta) + \frac{1}{4}(\alpha - \beta) = 4$$

$$\frac{3}{4} \times 4 + \frac{1}{4}(\alpha - \beta) = 4$$

$$\frac{\sqrt{36 - 12(m-1)}}{4} = 2 \Rightarrow 36 - 12(m-1) = 16$$

$$m = 1 \checkmark$$

۲

۴

$$\frac{m^2 - 2}{-m} = 1$$

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

$$m = 1 \quad m = -2$$

$$\begin{cases} m = 1 \Rightarrow -m^2 + 5m - 1 = 0 \quad \Delta > 0 \checkmark \\ m = -2 \Rightarrow 2m^2 + 5m + 1 = 0 \Rightarrow \Delta = 0 \quad \checkmark \end{cases}$$

۲

۵

$$\alpha\beta = 3$$

$$3\beta = 4$$

$$\beta = \frac{4}{3} \Rightarrow \alpha = \frac{9}{4}$$

$$\alpha + \beta = \frac{9}{4} + \frac{4}{3} = \frac{49}{12}$$

$$m = \frac{3}{4} \checkmark$$

(2)

6

$$\frac{\alpha + 3\alpha = 4}{\alpha = 1}$$

$$m = 3 \times 1 = 3 \checkmark$$

(2)

7

$$\alpha\beta = 3 \Rightarrow \beta = \frac{3}{\alpha} \Rightarrow \beta^3 = \frac{27}{\alpha^3}$$

$$\alpha^3 + \frac{27}{\alpha^3} = \alpha^3 + \beta^3 = (\alpha + \beta)^3 - 3(\alpha\beta)(\alpha + \beta)$$

$$= 27 - 3 \times 3 \times 4 = 3 \checkmark$$

(2)

8

$$\max H \Rightarrow$$

$$\frac{-\omega_0 \times \omega_0}{\epsilon_X - 1_0} = 9210 \checkmark$$

$$-10t^2 + \omega_0 t = 0$$

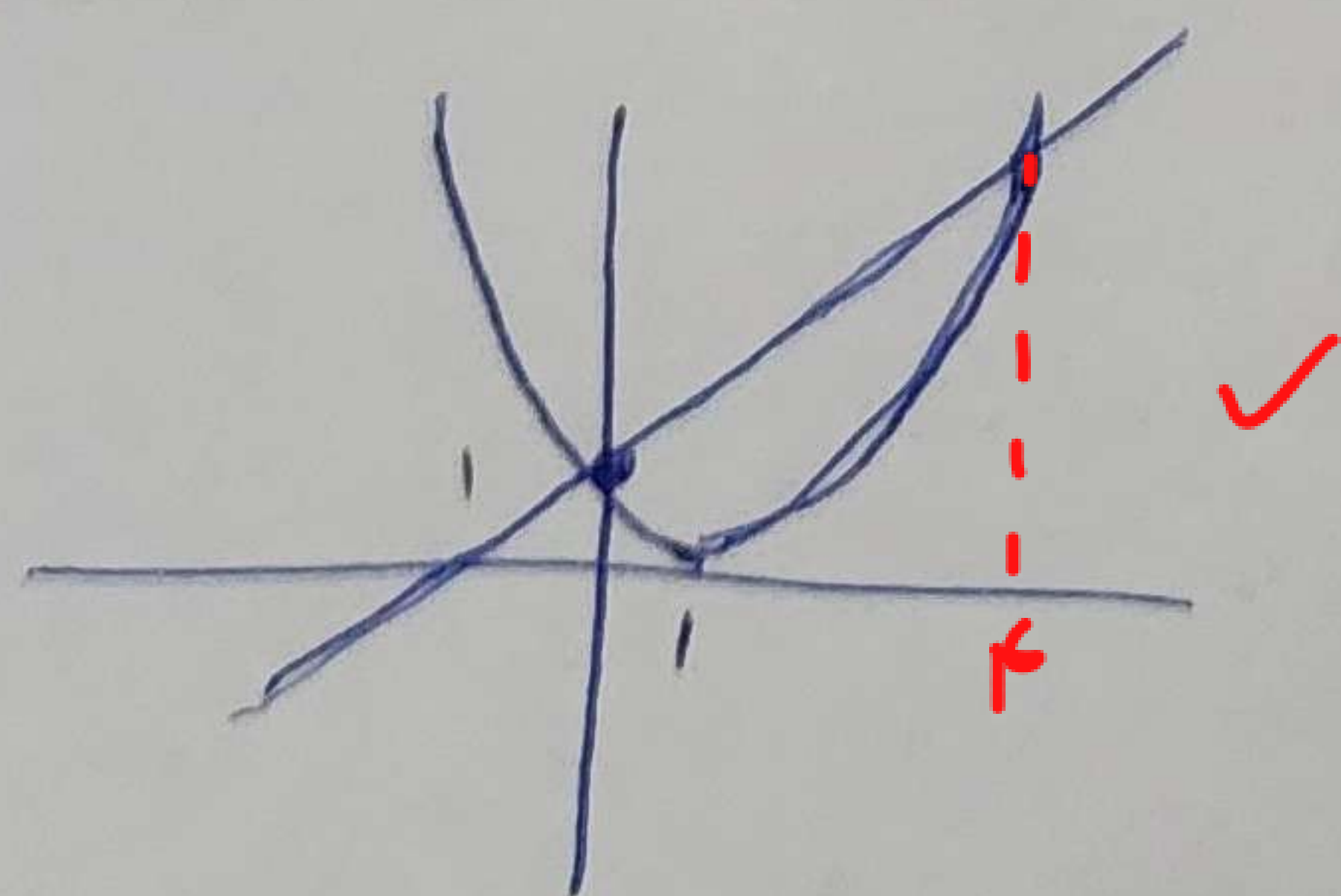
$$-10t(t - \omega_0) = 0$$

$$t = 0 \text{ و } t = \omega_0 \checkmark$$

(2)

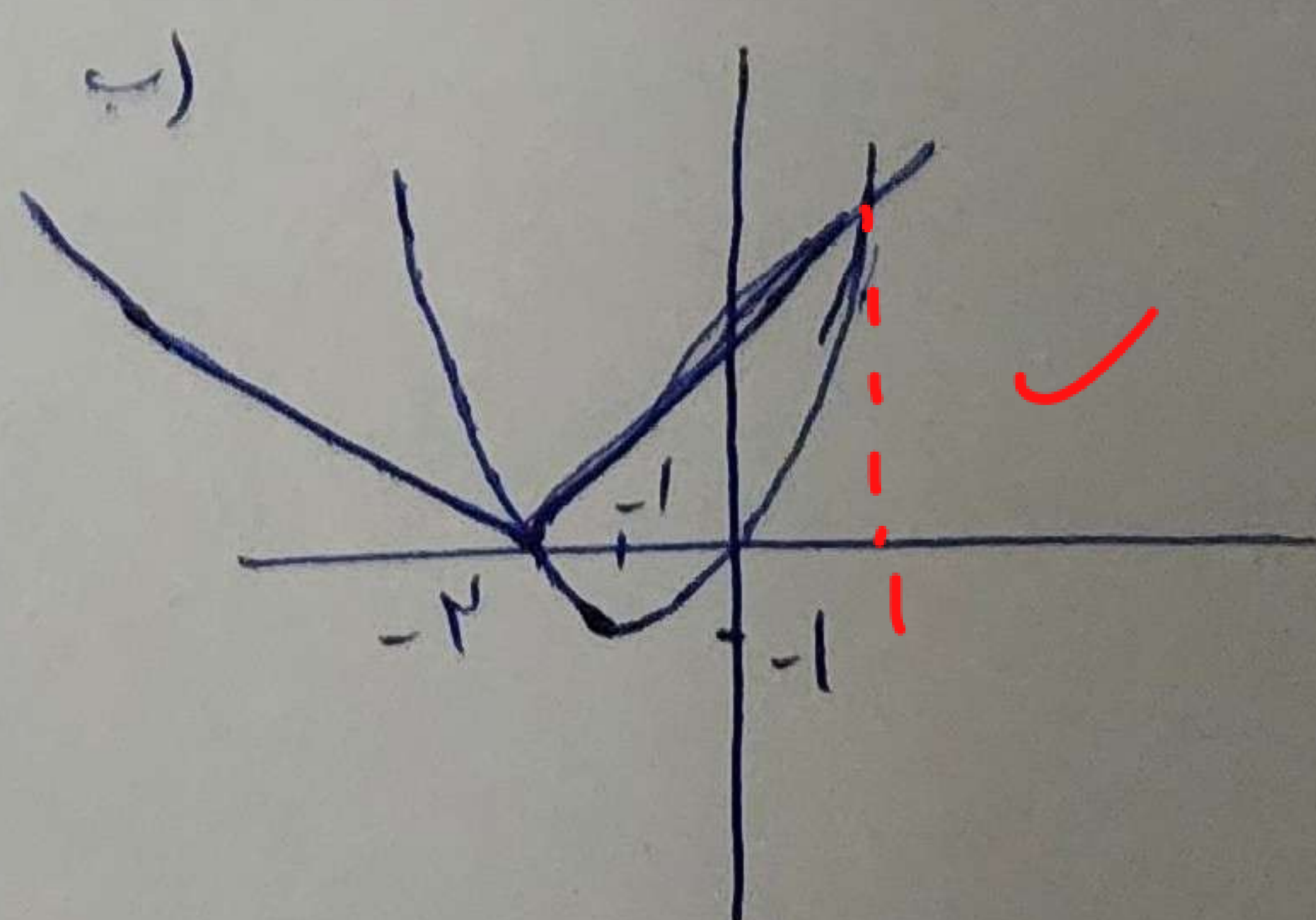
9

الف)



دو جواب 0 و 4 = x

ب)



دو جواب 2- و 1 = x

(2)

10