

$$\frac{-\Delta}{2a} = v \rightarrow \frac{-b \pm \sqrt{b^2 - 4ac}}{-4} \rightarrow b = \pm 4 \checkmark$$

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الف) ~~.....~~ $\Delta < 0 \rightarrow x \in \emptyset \checkmark$

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ب) $4 - x^2 = 0 \rightarrow -x^2 = -4 \rightarrow x^2 = 4$
 $\rightarrow x = \pm 2 \rightarrow x_1 = 2, x_2 = -2 \checkmark$

~~.....~~ $x^2 + px + q = 0$
 $x_1 + x_2 = -p$
 $x_1 x_2 = q$

$4x^2 - 19x + 12 = 0 \rightarrow \Delta > 0 \checkmark$

$\alpha, \alpha + 2 \rightarrow S = 2\alpha + 2$
 $\hookrightarrow \frac{14}{2} = 7 \rightarrow \alpha = 1$
 $\rightarrow x_1 = 1, x_2 = 3$
 $P = \frac{m}{f} = 2 \rightarrow m = 12 \checkmark$

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~~.....~~ $\beta = 2\alpha - 4 \Rightarrow S = 2\alpha - 4 = 2$

$\alpha = 2 \rightarrow \beta = 0$

~~.....~~

$m = 1 \rightarrow 2x^2 - 9x + 4 = 0 \rightarrow \Delta > 0 \checkmark$

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$\alpha, \beta \rightarrow P \times B = 4$

$\rightarrow \beta = \frac{4}{\alpha} \rightarrow \alpha = \frac{9}{4} \rightarrow S = m = \frac{4 \times 9}{12} \rightarrow x^2 - \frac{4 \times 9}{12}x + 4 = 0 \rightarrow \Delta > 0 \checkmark$

$\Delta > 0 \checkmark$

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$$\alpha + \frac{1}{\alpha} = \frac{\alpha^r + 1}{\alpha}$$

$$-\alpha^r + r\alpha - 1 = 0 \quad \Delta > 0 \quad \checkmark$$

$$\alpha \times \frac{1}{\alpha} = 1 \rightarrow \frac{\alpha^r - r}{-m} = 1 \rightarrow m = 1$$

$$r\alpha^r - r\alpha + r = 0 \rightarrow \Delta < 0$$

سوال:

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$$\alpha \times r\alpha = r\alpha^r = m \rightarrow \alpha^r - r\alpha + r = 0 \quad \checkmark$$

$$\alpha + r\alpha = r\alpha = r \rightarrow \alpha = 1 \quad \checkmark$$

$$\alpha^r + \frac{1}{\alpha} = \left(\alpha + \frac{r}{\alpha}\right) - r\left(\alpha + \frac{r}{\alpha}\right) \quad ; 1 \quad \checkmark$$

$$= \left(\alpha + \frac{r}{\alpha}\right) - r\left(\alpha + \frac{r}{\alpha}\right)$$

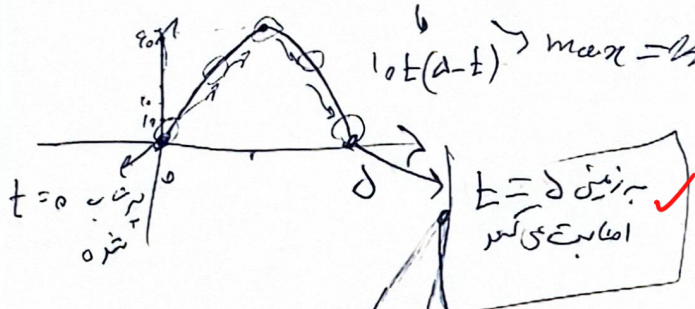
$$\alpha^r - r\alpha + r = 0 \rightarrow \alpha^r + r = r\alpha$$

$$\hookrightarrow \alpha + \frac{r}{\alpha} = r$$

$$\hookrightarrow \alpha = r - r \times \alpha = r(1 - \alpha) \quad \checkmark$$

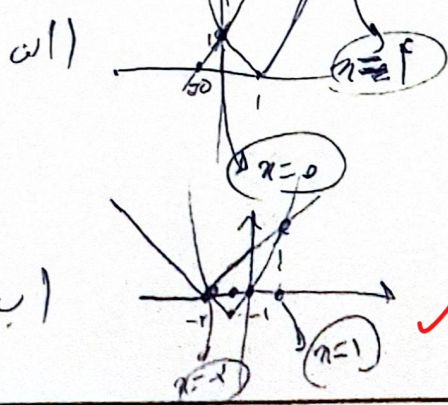
~~$$\alpha^r + \frac{1}{\alpha} = \frac{\beta^r + 1}{\beta} \rightarrow (\alpha - \beta) + \left(\frac{1}{\alpha} - \frac{1}{\beta}\right) = 0$$~~
~~$$(\alpha - \beta) \left(\frac{\alpha^r + \beta^r}{\alpha\beta} + \frac{1}{\alpha\beta}\right) + \left(\frac{1}{\alpha\beta} - \frac{1}{\alpha\beta}\right) = 0$$~~
~~$$\alpha^r - r\alpha + r = r\alpha - r\alpha + r = r(1 - \alpha) = r(1 - \alpha)$$~~

$$h(t) = -10t^2 + 20t \rightarrow \frac{dh}{dt} = \frac{20}{2} = 10$$



$$\frac{dh}{dt} = \frac{20}{2} = 10$$

$$\rightarrow \frac{1}{2} \times \frac{20}{1} = 10 \quad \checkmark$$



$$\alpha^r - r\alpha + 1 = r\alpha + 1 \rightarrow \alpha^r - r\alpha = 0$$

$$\alpha^r + r\alpha = \alpha + r \rightarrow \alpha + r = \pm (\alpha^r + r\alpha)$$

$$\left\{ \begin{array}{l} \alpha \leq -r \\ \alpha \geq 0 \end{array} \right\}$$