

المسألة

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$$y = -x^2 + bx + 3 \quad y_{\max} = 4 \quad b = ?$$

-1

$$x_{\text{mid}} = \frac{-b}{2a} \rightarrow \frac{b}{2}$$

$$b = \pm 2$$

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$$y_{\text{mid}} = -\left(\frac{b}{2}\right)^2 + b\left(\frac{b}{2}\right) + 3 \rightarrow -\frac{b^2}{4} + \frac{b^2}{2} + 3 \rightarrow \frac{b^2}{4} + 3 = 4$$

$$f(x) = x^2 + 2x + 3 \quad x^2 = t$$

-2

$$t^2 + 2t + 3 \rightarrow \Delta = b^2 - 4ac$$

$$\rightarrow 4 - 12 = -8 < 0 \rightarrow \text{لا يوجد جذور}$$

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

$$x - x^2 = t \rightarrow t^2 - 2t - 1 \rightarrow (t-2)(t+1) \rightarrow \begin{matrix} t=2 \\ t=-1 \end{matrix}$$

$$x - x^2 = 2 \rightarrow -x^2 = 1 \rightarrow x^2 = -1 \text{ غير ممكن}$$

$$x - x^2 = -1 \rightarrow -x^2 = -2 \rightarrow x^2 = 2 \rightarrow x = \pm\sqrt{2}$$

$$x^2 - 4x + m = 0 \quad \alpha = \beta + 1 \quad m = 9 \quad \alpha, \beta = ?$$

-3

$$\alpha = \beta + 1 \rightarrow \beta, \beta + 1$$

$$\alpha = 1, \beta = 0$$

$$p = \beta \times (\beta + 1) = \beta^2 + \beta = \frac{c}{a} = \frac{m}{4} \rightarrow m = 17$$

$$s = \beta + \beta + 1 = 2\beta + 1 = -\frac{b}{a} \rightarrow \frac{14}{4} = 2\beta + 1 \rightarrow \beta = 1$$

$$x^2 - 4x + m - 1 = 0 \quad 2\alpha - \beta = 5 \quad m = ?$$

-4

$$s = \frac{-b}{a} = \frac{-(-4)}{1} = 4 \quad p = \frac{c}{a} = \frac{m-1}{1}$$

$$\rightarrow \beta = 4 - \alpha \rightarrow 2\alpha - 4 + \alpha = 5 \rightarrow 3\alpha - 4 = 5 \rightarrow \alpha = 3$$

$$p = \alpha \times \beta = 3 \times 1 = 3 = \frac{m-1}{1} \rightarrow m-1 = 3 \rightarrow m = 4$$

$$\alpha = 3, \beta = 1$$

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$$-m\kappa^2 + f\kappa + m^2 - r = 0 \quad \alpha = \frac{1}{\beta} \quad m = ? \quad -\omega$$

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

$$S = \frac{-b}{a} \rightarrow \frac{-\varepsilon}{-m} \rightarrow \frac{\varepsilon}{m} \quad \rho = \frac{c}{a} = \frac{m^2 - r}{-m} = \beta \times \frac{1}{\beta} = 1$$

$$m^2 - r + m = 0 \rightarrow m^2 + m - r = 0 \rightarrow m = 1$$

$$S = -r = \frac{1}{\beta} + \beta \xrightarrow{\text{جواب}} (\beta = -1), \quad S = \varepsilon = \frac{1}{\beta} + \beta \rightarrow \frac{r \pm \sqrt{1-r}}{r}$$

$$\kappa^2 - m\kappa + r = 0 \quad \alpha/\beta^2 = r \quad m = ? \quad -\gamma$$

$$S = \frac{-b}{a} = m \quad \rho = \frac{c}{a} = r$$

$$\hookrightarrow \alpha\beta = r, \alpha\beta^2 = \varepsilon \rightarrow \beta = \frac{\varepsilon}{r}, \alpha = \frac{r}{\varepsilon}$$

$$\frac{\varepsilon}{r} + \frac{r}{\varepsilon} = m \rightarrow \frac{14 + r\varepsilon}{r} = m \rightarrow 12m = \varepsilon r \rightarrow m = \frac{\varepsilon r}{12}$$

$$m = ? \quad \kappa^2 - \varepsilon\kappa + m = 0 \quad \alpha = r\beta \quad -\nu$$

$$S = \frac{-b}{a} = \varepsilon \quad \rho = \frac{c}{a} = m \rightarrow \alpha \times \beta = m \rightarrow r \times 1 = m$$

$$\hookrightarrow \varepsilon = r\beta + \beta = \varepsilon\beta \rightarrow \beta = 1, \alpha = r \quad \hookrightarrow m = r$$

$$\kappa^2 - \nu\kappa + r = 0 \quad \alpha^2 + \frac{\Lambda}{\alpha^2} = r \quad -\Lambda$$

$$\rho = \frac{c}{a} = r \quad S = \frac{-b}{a} = \nu$$

$$\hookrightarrow \beta\alpha = r \rightarrow \beta = \frac{r}{\alpha} \quad \hookrightarrow \alpha + \beta = \nu \rightarrow \beta = \nu - \alpha$$

$$\frac{r}{\alpha} + \alpha = \nu \xrightarrow{\text{جواب}} \alpha^2 + \frac{\Lambda}{\alpha^2} + r \times \frac{r}{\alpha} \left(\alpha + \frac{\nu}{\alpha} \right) \rightarrow$$

$$r\varepsilon r = \alpha^2 + \frac{\Lambda}{\alpha^2} + \varepsilon r \rightarrow \alpha^2 + \frac{\Lambda}{\alpha^2} = r \quad -\theta$$

$$h(t) = -10t^2 + 20t \quad h_{\max} = ? \quad -\theta$$

$$y = -10\kappa^2 + 20\kappa \rightarrow \kappa_{\max} = \frac{-b}{2a} = \frac{-20}{-20} = 1 \text{ s}$$

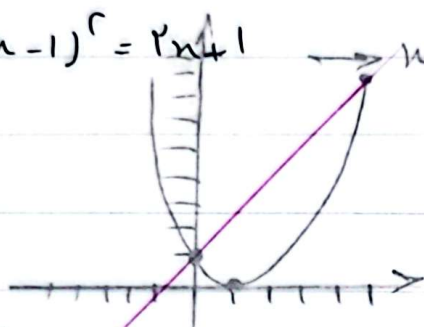
$$y_{\max} = -10(1)^2 + 20(1) = 10 \text{ m} = h_{\max}$$

$$0 = -10\kappa^2 + 20\kappa \rightarrow \kappa = 0 \quad \text{جواب} \quad \kappa = 2 \quad \text{جواب} \rightarrow t = 2 \text{ s}$$

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الخطوة الأولى

$$(n-1)^2 = 2n+1$$



$$n_{\text{min}} \rightarrow 1 \quad y_{\text{min}} = 0$$

$$n^2 - 2n + 1 = 2n + 1$$

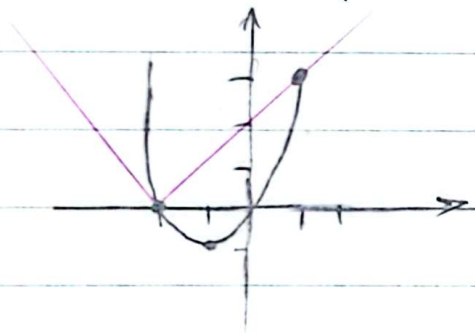
$$\hookrightarrow n^2 - 4n = 0$$

الحل

$$\hookrightarrow n=0, y=1$$

$$\hookrightarrow n=4, y=9$$

$$n^2 + 2n = |n+1| \rightarrow n_{\text{min}} = -1 \quad y_{\text{min}} = -1$$



$$\hookrightarrow n = -1$$

$$n^2 + 2n = n+1 \rightarrow n^2 + n - 1$$

$$n^2 + 2n = -n-1 \rightarrow n^2 + 3n + 1$$

$$\hookrightarrow n = -1 \quad n = -2$$