

کتاب و خط

بزرگم رفیق

نایب شاه تهری

$$y = (a-1)x^2 + x + 2$$

①

$$x_0 = 2 \rightarrow \frac{-b}{2a} = 2 \rightarrow \frac{-1}{2(a-1)} = 2 \rightarrow 2(a-1) = -1$$

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

$$y = \frac{1}{2}x^2 + x + 2 \rightarrow \Delta = b^2 - 4ac = 1 - 4\left(\frac{1}{2}\right)(2) = -3$$

$$x = \frac{-b \pm \sqrt{\Delta}}{2a} = \frac{-1 \pm \sqrt{-3}}{1} \rightarrow \boxed{x = +9}$$

$$\rightarrow x = -1$$

$$f(x) = mx^2 - \omega x + m$$

x	x_1	x_2
$f(x)$	$-$	$+$

① $m < 0$

② $\Delta > 0 \rightarrow 2\omega - 4m^2 > 0 \rightarrow 4m^2 < 2\omega$
 $m^2 < \frac{\omega}{2} \rightarrow$

$$y = x^r - sx + p \quad s = \frac{r - \sqrt{\Delta}}{r} + \frac{r + \sqrt{\Delta}}{r} = r \quad (1)$$

$$p = \left(\frac{r - \sqrt{\Delta}}{r} \right) \left(\frac{r + \sqrt{\Delta}}{r} \right) = \frac{r}{9}$$

$$y = x^r - rx + \frac{r}{9} \rightarrow x^9 \rightarrow \boxed{y = 9x^r - 18x + r}$$

$$rx^r - 18x + m + r = 0 \quad \alpha < \beta$$

$$rx^r + \beta^r = 18$$

$$\alpha^r + \beta^r = s^r - rp = 18 - r \left(\frac{m+r}{r} \right) = 18 - m$$

$$rx^r = 18 - 18 + m = m - r \rightarrow rx^r = 18 - m - r$$

$$m - r = 18 - m - r$$

$$\alpha = \frac{m}{r} \quad \beta = r - \frac{m}{r} = \frac{18 - m}{r}$$

$$\alpha\beta = \frac{m+r}{r} = \left(\frac{m}{r} \right) \left(\frac{18-m}{r} \right) \rightarrow -m^r + 18m = 18(m+r)$$

$$-m^r + 18m - 18r = 0$$

$$m^r - 18m + 18r = 0 \rightarrow \boxed{m = r}$$

$$y = ax^r + bx + c \quad c = \Delta \quad (2)$$

$$s(r, 9) \rightarrow \frac{-b}{ra} = r \rightarrow b = -ra$$

$$ra + rb + c = 9 \rightarrow ra + rb = r$$

$$-ra = r \rightarrow a = -1$$

$$b = r$$

$$c = \Delta$$

$$y = -x^r + rx + \Delta$$

$$y = -(x - \Delta)(x + 1)$$

$$\frac{-1 \quad \Delta}{- \phi + \phi -}$$

$$\boxed{x \in (-1, \Delta)}$$

$$\alpha^2 - V\alpha + 9\beta = 0 \quad \beta > 0 \quad \alpha\beta = \frac{9\beta}{\alpha} \rightarrow \alpha^2 = 9 \quad (4)$$

$$\frac{1}{\alpha} + \frac{1}{\beta} = ?$$

$$\alpha + \beta = \frac{V}{\alpha} \rightarrow \alpha^2 + \alpha\beta = V$$

$$\alpha\beta = -1$$

$$\alpha^2 = 9 \rightarrow \alpha = 3 \rightarrow \beta = \frac{-1}{3} \times$$

$$\alpha = -3 \rightarrow \beta = \frac{1}{3}$$

$$\frac{1}{\alpha} + \frac{1}{\beta} = \frac{-1}{3} + \frac{1}{3} = \frac{-1+1}{3} = \frac{0}{3} = 0$$

$$\alpha^2 + m\alpha - 1 = 0 \rightarrow \alpha^2 = -m\alpha + 1 \quad (5)$$

$$\alpha^2 - m\beta = 1 \rightarrow -m\alpha - m\beta + 1 = 1$$

$$\alpha + \beta = ? \quad -m(\alpha + \beta) = 1 - 1$$

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

$$(m+1)(m-1) = 0$$

$$m = -1 \rightarrow \alpha^2 - 1\alpha + 1 = 0 \rightarrow \Delta < 0$$

$$m = 1 \rightarrow \alpha^2 + 1\alpha - 1 = 0 \quad (6)$$

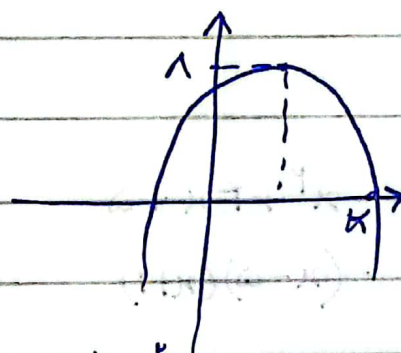
$$m = 1 \rightarrow \alpha + \beta = -m \rightarrow \alpha + \beta = -1$$

$$f(x) = m\alpha^2 + 1\alpha + \frac{m}{1} + 1$$

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

$$\left(\frac{1}{m}\right)^2 \times m - \frac{1}{m} + \frac{m}{1} + 1 = 1$$

$$\frac{1}{m} - \frac{1}{m} + \frac{m}{1} = 1 \rightarrow \left(\frac{1}{1} - \frac{1}{m} = 1\right) \times m \rightarrow \frac{1}{1} m^2 - m - 1 = 0$$

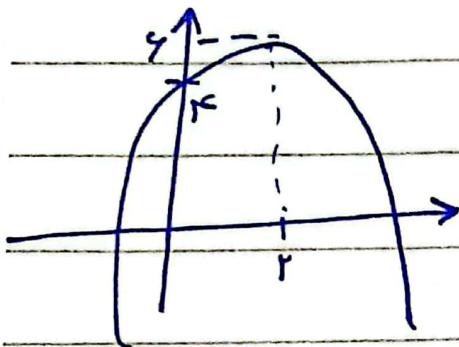


(A)

$$m^2 - km - 1 = 0 \rightarrow m = k \rightarrow km^2 + km + 1 \rightarrow 0 \cdot \cdot \cdot$$

$$\rightarrow m = -k \rightarrow -km^2 + km + 1 = 0 \rightarrow n = -1$$

$$\boxed{n = k = k}$$



$$y = a(x - x_0)^2 + y_0$$

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$$y = a(x - r)^2 + k$$

$$x = 0 \rightarrow y = ka + k = k$$

$$ka = -k \rightarrow a = -\frac{1}{k}$$

$$y = -\frac{1}{k}(x^2 - km + k) + k$$

$$y = -\frac{1}{k}x^2 + mx + k$$

$$\frac{1}{x_1} + \frac{1}{x_2} = \frac{x_1 + x_2}{x_1 x_2} =$$

$$\frac{-k}{-\frac{1}{k}} = k \rightarrow \frac{1}{x_1} + \frac{1}{x_2} = \boxed{\frac{-1}{k}}$$

$$\rightarrow \frac{1}{x_1} + \frac{1}{x_2} = \boxed{\frac{-1}{k}}$$

$$x^2 - (ka + k)x + (ka^2 + ka + k) = 0 \quad a + 1 = m$$

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$$x^2 - kmx + km^2 = 0$$

$$\rightarrow n = r \rightarrow \boxed{n = \frac{k}{k}}$$

$$x = r \rightarrow k - km + km^2 = 0$$

$$km^2 - km + k = 0$$

$$km^2 - km + k = 0 \rightarrow m = \frac{k}{k} \rightarrow x^2 - \frac{1}{k}x + \frac{k}{k} = 0$$

$$\rightarrow m = r \rightarrow x^2 - km + k = 0$$

$$\rightarrow n = r$$

$$\boxed{n = k}$$