

۱۷۱۵

$$Dg = R$$

→ ~~تجزیه~~ ۵

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تابع هائیدارند.

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| $f(x) = \frac{bx+r}{\lambda x+b} \rightarrow \frac{b}{\lambda} = \frac{r}{b} \rightarrow b^2 = \lambda r \rightarrow b = \pm \sqrt{\lambda r}$ $\textcircled{1} \rightarrow b = \sqrt{\lambda r} \Rightarrow \frac{r x + r}{\lambda x + \sqrt{\lambda r}} = \frac{r(x+1)}{\sqrt{\lambda}(x+1)} = \frac{1}{\sqrt{\lambda}} \rightarrow C = \frac{1}{\sqrt{\lambda}} / \lambda x + \sqrt{\lambda r} \neq 0 \rightarrow x \neq -\frac{1}{\sqrt{\lambda}} \rightarrow a = -\frac{1}{\sqrt{\lambda}} \Rightarrow \frac{ab}{C} = \frac{-\frac{1}{\sqrt{\lambda}} \times \sqrt{\lambda r}}{\frac{1}{\sqrt{\lambda}}} = -r$ $\textcircled{2} b = -\sqrt{\lambda r} \rightarrow \frac{r x + r}{\lambda x - \sqrt{\lambda r}} = \frac{r(x+1)}{-\sqrt{\lambda}(x+1)} = -\frac{1}{\sqrt{\lambda}} \rightarrow C = -\frac{1}{\sqrt{\lambda}} / \lambda x - \sqrt{\lambda r} \neq 0 \rightarrow x \neq -\frac{1}{\sqrt{\lambda}} \rightarrow a = -\frac{1}{\sqrt{\lambda}} \Rightarrow \frac{ab}{C} = \frac{-\frac{1}{\sqrt{\lambda}} \times (-\sqrt{\lambda r})}{-\frac{1}{\sqrt{\lambda}}} = -r$ | $g(x) = C, D_g = \mathbb{R} - \{a\}$ |
| $rf-1 = \{(1, r), (r, r), (r, -a), (a, 0)\} \rightarrow f = \{(-1, r), (r, r), (r, -r), (0, \frac{1}{r})\} \rightarrow D_f = \{-1, r, r, 0\}$ $g = \{(r, r), (r, r), (-1, -r), (a, 0)\} \Rightarrow D_{g \setminus 1} = \{-1, r, r\}$ $\hookrightarrow D_g = \{r, r, -1, a\}$ $\Rightarrow \{(r, \frac{1}{r+1}), (-1, \frac{-1}{-r+1}), (r, \frac{1}{r+(-1)})\} = \{(r, 1), (-1, r), (r, r)\}$ $R = \{1, r, r\}$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | $v$                                  |
| $f = \{(r, a), (-r, ra - rb), (c, a), (r, d)\}$ $g = \{(r, -1), (-r, 1), (a - rb, a)\}$ $a = -1 = d$ $\frac{r}{1}x - rb = 1 \rightarrow -rb = 1 + r \rightarrow -rb = 1 + r \rightarrow b = -r$ $\frac{a - rb}{-1} = c \rightarrow -1 - (\frac{r}{-1}x - r) = c \rightarrow -1 + r = c \rightarrow c = a$ $d + c = -1 + a = 0$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | $\lambda$                            |
| $D_f \Rightarrow -rx^2 + ax - m \geq 0 \rightarrow \Delta \leq 0 \rightarrow \Delta = 1 - (4x - 1x - m) = 0 \rightarrow 1 - 4m = 0 \rightarrow 1 = 4m \rightarrow m = \frac{1}{4}$ $\hookrightarrow f(x) = \sqrt{-x^2 + x - \frac{1}{4}} \rightarrow -x^2 + x - \frac{1}{4} \geq 0 \rightarrow x = \frac{-1 \pm \sqrt{0}}{-2} = -\frac{1}{2}$ $\hookrightarrow (\frac{1}{2})^2 + \frac{1}{2} - \frac{1}{4} = \sqrt{-\frac{1}{4} + \frac{1}{2} - \frac{1}{4}} = \sqrt{-\frac{1}{4} + \frac{1}{2} - \frac{1}{4}} = 0$ $\therefore f(x) = g(x) \rightarrow a = \frac{1}{2} \Rightarrow a + b = \frac{1}{2} + 0 = \frac{1}{2}$                                                                                                                                                                                                                                                                                                                                                                                                                                                           | $q$                                  |
| $g(x) = \frac{r}{x-c} \rightarrow x \neq c \rightarrow D_g = \mathbb{R} - \{c\} \rightarrow x^2 + 4x + 9 \rightarrow (x+2)^2 = 0 \rightarrow x = -2$ $f(x) = \frac{rx+a}{x^2+4x+b} \rightarrow x^2+4x+b = (x-c)^2 \rightarrow \frac{rx+a}{x^2+4x+b} = \frac{rx+a}{x^2-4cx+c^2}$ $\star a+b+c = 1+1-2 = 0$ $\hookrightarrow x^2+4x+b = x^2-4cx+c^2 \Rightarrow 4 = -4c \rightarrow c = -1$ $c^2 = b \rightarrow b = 1$ $\frac{rx+a}{(x+2)^2} = \frac{rx+a}{(x+2)^2} \rightarrow \frac{rx+a}{(x+2)^2} = \frac{rx+a}{(x+2)^2} \rightarrow a = b = 1$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | $1.$                                 |