

الف) $D_f = R^+ U \{ \cdot \}, D_g = \mathbb{R} \Rightarrow f(m) \neq g(m)$ سوال 1

ب) $D_f = D_g = \mathbb{R}, (x+r)(m+1) + n + f = \frac{x^r + r^r n + f + n + f}{x^r + \delta n + v} = \frac{x^r + \delta n + v}{x^r + \delta n + v} = 1 \Rightarrow f(m) = g(m)$

ج) $\frac{r \sin n (r \sin x - r)}{r \sin n - r} = r \sin n \Rightarrow D_f = D_g \Rightarrow f(m) = g(m)$

د) $x \neq 0 \rightarrow D_f = D_g \Rightarrow \mathbb{R} - \{0\}, f(m) = g(m)$ خطاب شماره 12 د 11-11-1392

الف) $f(m) = g(m) \Rightarrow D_g = D_f = \mathbb{R}, f(m) = 0, g(m) = 0$ سوال 2

ب) $f(m) \neq g(m) \Rightarrow D_g = D_f = \mathbb{R} - \{ \cdot \}, \text{if } n = -1, r, g(m) = -\frac{1}{r}, f(m) = -\frac{1}{m} \Rightarrow -\frac{1}{m} \neq -\frac{1}{r}$

ج) $f(m) \neq g(m) \Rightarrow D_g = R^+, D_f = \emptyset \Rightarrow n - |m| > 0, |n| - n > 0 \Rightarrow n > |m|, |m| > n$

د) $f(m) \neq g(m) \Rightarrow D_g \neq D_f = \mathbb{R}, \text{if } n = 1, \rightarrow f(m) = \frac{900}{99}, g(m) = 1100 \Rightarrow 1100 \neq \frac{900}{99}$

$f^r(n) - g^r(m) = (f^r(n) - g^r(m)) (f^r(n) + g^r(m)) = n^r + n^r + r^r \cdot n^r - n^r - n^r + n^r + n^r + 1 = m^r + n^r + 1$ سوال 3

$f(n) - g(m) = n^r - m + 1$

$f(n) + g(m) = n^r + m + 1$

$r f(n) = r m^r + r \Rightarrow f(n) = m^r + 1, g(m) = n$

$(x + \sqrt{x^r - r})(x - \sqrt{x^r - r}) = x^r - (x^r - r) = r$ سوال 4

$\begin{cases} r m^r - r m - \delta \\ b x^r - r m - 1 \end{cases} = (x - \delta)(m + r) \rightarrow n = \frac{\delta}{r}, -\frac{r}{r}$ سوال 5

$n \rightarrow -1 \rightarrow 1 + m + n = 0$

$n \rightarrow \frac{\delta}{r} \rightarrow \frac{r \delta}{r} - \frac{\delta}{r} m + n = 0 \rightarrow \frac{r \delta}{r} - \frac{\delta}{r} m + n = 1 + m + n \rightarrow \frac{r \delta}{r} = \frac{r}{r} m \Rightarrow m = \frac{r}{r}$

$n = -\frac{\delta}{r}$

$f(m) = g(m)$

$ram + f = n - b$ صورت ها

$a = \frac{1}{r}, b = -r \quad am - bn \Rightarrow (\frac{1}{r} \times \frac{r}{r}) - (-r \times -\frac{\delta}{r})$

$\frac{r}{r} - \frac{r \delta}{r} \rightarrow \frac{-r \delta}{r}$

سوال ۶

$$am+b \neq 0 \rightarrow am+b=0 \rightarrow a = -\frac{b}{m} \rightarrow a = \pm \frac{1}{m}$$

$$\left. \begin{array}{l} i) f \rightarrow m=1 \rightarrow \frac{b+r}{1+b} = c \\ i) f \rightarrow m=r \rightarrow \frac{rb+r}{b+1+r} = c \end{array} \right\} \rightarrow \frac{b+r}{1+b} = \frac{rb+r}{b+1+r} \Rightarrow b = \pm r$$

$$c = \pm \frac{1}{r}$$

$$\frac{\frac{1}{r}x^r}{\frac{1}{r}}, \frac{\frac{1}{r}x^{-r}}{\frac{1}{r}}, -\frac{\frac{1}{r}x^r}{\frac{1}{r}}, -\frac{\frac{1}{r}x^{-r}}{\frac{1}{r}}, \frac{\frac{1}{r}x^r}{-\frac{1}{r}}, \frac{\frac{1}{r}x^{-r}}{-\frac{1}{r}}, -\frac{\frac{1}{r}x^r}{-\frac{1}{r}}, -\frac{\frac{1}{r}x^{-r}}{-\frac{1}{r}}$$

$$\{r, -r, -r, r, -r, r, -r, r\} \rightarrow \{r, -r\} \rightarrow \pm \frac{1}{r}$$

سوال ۷

$$\{(1,1)(1,1)(-1,1)\} \cdot \frac{19}{f+g} \Rightarrow \frac{1}{r+1}, \frac{1}{r+1}, \frac{-1}{-r+1} \Rightarrow 1, 1, -1$$

$$R_f = \left\{ \frac{1}{11}, 11, -1 \right\} \quad f(m) = \{(1,1)(1,1)(1,1)(1,1)\}$$

$$a+d = -1$$

$$a-rb=1 \rightarrow b=-2 \quad d+c \rightarrow -1+d = \frac{r}{3}$$

$$a-rb=c \Rightarrow d$$

سوال ۸

$$x^2-x+m \leq 0 \quad \Delta \leq 0 \rightarrow m \leq \frac{1}{4}$$

$$D = 1-4m$$

$$x_{1,2} = \frac{1 \pm \sqrt{1-4m}}{2} \rightarrow D_{f,g} = \left[\frac{1+\sqrt{1-4m}}{2}, \frac{1+\sqrt{1-4m}}{2} \right]$$

$$a+b=1 \Rightarrow \frac{1-\sqrt{1-4m}}{2} + \frac{1+\sqrt{1-4m}}{2} = 1$$

سوال ۹

$$x \neq c \rightarrow x^2+4x+4 \rightarrow (x+2)^2 \rightarrow x \neq -2$$

سوال ۱۰

$$b=9, c=-3$$

$$x=1 \rightarrow \frac{r}{r} = \frac{r+a}{14} \rightarrow a=9$$

$$a+b+c=14 \rightarrow 9+9-3$$