

1) $\frac{x^2-1}{x^2} \geq 0 \rightarrow \frac{x^2-1}{x^2} = 0 \rightarrow x^2-1=0 \rightarrow x^2=1 \rightarrow x = \pm \frac{1}{x} \rightarrow x = \pm \frac{1}{x}$ 2) $x \neq 0$
 $x^2=0 \rightarrow x=0^*$
 $\frac{-1}{+} \quad \frac{0}{-} \quad \frac{+1}{+}$ $\rightarrow (-\infty, -\frac{1}{x}] \cup [\frac{1}{x}, \infty)$ \rightarrow ∞ \rightarrow ∞
 $\infty \rightarrow b = R - (-\frac{1}{x}, \frac{1}{x})$

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$m \neq 0 \rightarrow 2m \neq 0 \rightarrow 1) m \geq 0$
 $2) \Delta \rightarrow 0 \rightarrow x^2 - 2m \rightarrow x^2(m-1) \rightarrow m=0$
 $m=1$
 $\frac{-\infty}{+} \quad \frac{0}{-} \quad \frac{1}{-} \quad \frac{+\infty}{+}$
 $m \in [1, \infty) \cup \{0\}$

$a = \frac{1}{x} / x = \frac{1}{x} \rightarrow 2a + k = 2 \rightarrow k = 0$
 $f(x) \quad g(x)$
 $f(x) = g(x)$
 $a + k = \frac{1}{x} + 0 = \frac{1}{x}$
 دسی داندن هاسم برابری
 با $x = \frac{1}{x}$ داریم
 $x \neq \frac{1}{x}$

$x=1 \rightarrow \frac{9-x^2}{a} = 1 = 2 + b \rightarrow b = -2 \rightarrow g(x) = 3x - 2$
 $x = \frac{2}{x} \rightarrow -2a + 2 = -2 \rightarrow -2a = -4 \rightarrow a = 2$
 $a - b = 2 - (-2) = 4$

$x=2 \rightarrow 2a + 2a = 5 \rightarrow 2a + 2a - 5 = 0 \rightarrow a^2 + a - 2 = 0 \rightarrow (a+2)(a-1) = 0$
 $a = -2 \rightarrow 1 - 2 = -1 \rightarrow x = 2 \rightarrow 5 = 5$
 $a = 1 \rightarrow 2 + a \rightarrow x = 2 \rightarrow 5 = 5$
 $d = -2 - 1$

$$x=a \rightarrow a^2+a = a^2-2 \rightarrow 2a = -2 \Rightarrow a = -1$$

۱

$$g(x) = f(x) = 3 \rightarrow 2x + b = 3 \rightarrow 2x = 3 - b \rightarrow b = -1$$

$$f(x) = \frac{x^2+a}{2x+1} \quad x=2 \rightarrow \frac{4+a}{5} = 2 \rightarrow 4+a = 10 \rightarrow a = 6$$

$$f(x) = \frac{x^2+6}{2x+1} \rightarrow f(1) = \frac{1+6}{2+1} = \frac{7}{3}$$

۲

$$2x^2 + ax + b = 0 \begin{cases} x=-1 \rightarrow 2-a+b=0 \rightarrow a-b=2 \rightarrow -2-b=2 \rightarrow b=-4 \\ x=2 \rightarrow 8+4a+b=0 \rightarrow 4a+b=-8 \end{cases}$$

$$f(x) = \frac{2x+1}{2x^2-4x-8} \rightarrow f(1) = \frac{3}{-12} = -\frac{1}{4}$$

$$\begin{cases} a-b=2 \\ a+b=-8 \end{cases} \rightarrow \begin{cases} a=-1 \\ b=-4 \end{cases}$$

۳

$$-5x^2 + ax + b = 0 \xrightarrow{x=-1} 0 \rightarrow -5(x+1)^2 = -5x^2 - 10x - 5 \rightarrow \begin{cases} b = -5 \\ a = -10 \end{cases}$$

منظور این هست که چون

کمیته ریاضه مخرج (۱) هست و بی
صانع از $M(x+1)^2$ دارد و چون
فردیب x^2 برابر M هست و در معادله
اصولی برابر -5 است و بی $M = -5$

۴

$$1) \Delta < 0 \rightarrow m^2 - 4 < 0 \rightarrow m^2 < 4 \rightarrow -2 < m < 2 \quad (I)$$

$$2) \Delta = 0, x = -1 \rightarrow m^2 - 4 = 0 \rightarrow m^2 = 4 \rightarrow m = \pm 2$$

$$\begin{cases} m=2 \rightarrow x^2 + 2x + 1 = 0 \xrightarrow{x=-1} 1-2+1=0 \checkmark \\ m=-2 \rightarrow x^2 - 2x + 1 = 0 \xrightarrow{x=-1} 1+2+1 \neq 0 \times \end{cases} \quad (II)$$

$$(I) \cup (II) \Rightarrow -2 < m \leq 2$$