

$x^2 - ax + b \Rightarrow P = b = 3, S = 1 + 3 = 4 \Rightarrow a + b = 4 + 3 = 7$

$g = ((k-2)x + m - 1)(x - 3n)^2, \Rightarrow -1 = -3n = 1 \Rightarrow n = -\frac{1}{3}$

باتوجه به جدول تعیین علامت  
ضریب  $x^3$  منفی بوده و همین در  
 $(x+1)^2$  ضریب  $x^2$  همواره + است  
 $\Rightarrow k-2 < 0 \xrightarrow{k \in \mathbb{N}} k=1 \left\{ \begin{array}{l} x=1 \Rightarrow -1+m-1=0 \Rightarrow m=2 \\ m+k = \frac{2}{-\frac{1}{3}} + 1 = -14 \end{array} \right.$

$\frac{-1}{3}x^2 + 2x + 6 \Rightarrow \frac{1}{3}x^2 - 4x - 12 \Rightarrow x^2 - 4x - 12 \Rightarrow x^2 - 4x - 6 \Rightarrow (x+1)(x-6) \Rightarrow \frac{-1}{3} \frac{6}{-1} \Rightarrow (a,b) = (-1, 6) \Rightarrow 6 - (-1) = 7$

$f(x) = x^3 - 3x^2 - x + 3 \Rightarrow (3-x)(1-x^2) = (3-x)(1-x)(1+x) \Rightarrow (a,b) = (1, 3) \Rightarrow 3 - 1 = 2$

$x=2 \Rightarrow (3-2)(1-2)(1+2) = -3$

$y = (a-1)x^2 + (a-1)x + 1 \Rightarrow a-1 < 0 \Rightarrow \textcircled{1} a < 1 \left\{ \begin{array}{l} \textcircled{2} P = \frac{c}{a} = \frac{1}{a-1} > 0 \\ \Delta < 0 \Rightarrow a^2 + 1 - 2a - 4a + 4 < 0 \Rightarrow (a-2)^2 < 0 \end{array} \right. \Rightarrow \textcircled{3} a \in (1, 2) \Rightarrow \textcircled{1}, \textcircled{2}, \textcircled{3} \Rightarrow \emptyset$

$\frac{m(m^3+m)}{m-2} > 0 \Rightarrow \frac{m^2(m^2+1)}{m-2} \Rightarrow \frac{2}{-1} \Rightarrow \boxed{m > 2}$

$m^2+1=0 \Rightarrow m^2=-1 \Rightarrow$  همواره +

$\frac{(x^2-x-6)(x-1)^2}{(x^2+x+1)(x-2)^3} > 0 \Rightarrow \frac{(x-3)(x+2)(x-1)^2}{(x^2+x+1)(x-2)^3} > 0 \Rightarrow \Delta = [-2, 2) \cup [3, +\infty)$

مجموعه جواب

$f(x) = \frac{3x^2 - 2x}{x^2 + 4} < 2 \Rightarrow \frac{3x^2 - 2x}{x^2 + 4} < 2x^2 + 8 \Rightarrow x^2 - 2x - 8 < 0 \Rightarrow (x-4)(x+2) < 0 \Rightarrow \frac{-2}{+} \frac{4}{-} \Rightarrow (a,b) = (-2, 4) \Rightarrow b - a = 4 - (-2) = 6$

↗ + همواره  $\Delta < 0$

$$-1 < \frac{\mu x^2 - \epsilon x}{x+1} < 0 \Rightarrow -1 < \frac{\mu x^2 - \epsilon x}{x+1} \Rightarrow 0 < \frac{\mu x^2 - \epsilon x + x + 1}{x+1} \Rightarrow 0 < \frac{\mu x^2 - \mu x + 1}{x+1} \Rightarrow \frac{-1}{-\frac{\epsilon}{\mu} + 1} \Rightarrow \textcircled{1} \boxed{x > -1},$$

$$\frac{\mu x^2 - \epsilon x}{x+1} < 0 \Rightarrow \frac{x(\mu x - \epsilon)}{x+1} < 0 \Rightarrow \frac{-1 \quad 0 \quad \frac{\epsilon}{\mu}}{-\frac{\epsilon}{\mu} + 1 \quad + \quad 0 \quad +} \Rightarrow \boxed{x \in (-\infty, -1) \cup (0, \frac{\epsilon}{\mu})}$$

مجموعه جواب  $\Rightarrow \textcircled{1}, \textcircled{2} \Rightarrow S = \boxed{(0, \frac{\epsilon}{\mu})}$

$$\frac{x^2 - 1}{x} \ll \mu \Rightarrow \frac{x^2 - 1 - \mu x}{x} \ll 0 \Rightarrow \frac{(x+1)(x-\omega)}{x} \ll 0 \Rightarrow \frac{-1 \quad 0 \quad \omega}{- \quad + \quad \frac{\epsilon}{\mu} \quad - \quad +} \Rightarrow \boxed{x \in (-\infty, -1] \cup (0, \omega]}$$