



1- الفنا بخشوا δ | (A) جیمک نما

$$f(x) = x^2 - 3x + 3 = (x-1)(x-2)$$

$f(1) = 0$
 $f(2) = 0$

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

$a = 1$
 $b = 2$

2- $(k-2)f + m - 1 = 0 \Rightarrow f k - 2 + m = 0 \rightarrow q - f k = m$

$y = (k-2)(x-2)(x+1) \Rightarrow (k-2) = \boxed{k=1}$

$-fk + 9 \rightarrow -f(1) + 9 \Rightarrow \boxed{m=8}$

$n = -\frac{1}{3} \rightarrow$ چون ریشه دوبار بود در علامت تصون $\Rightarrow -1 < x < 1$

3- $-\frac{1}{x} x^2 + 2x + 6 > \frac{1}{x} \rightarrow -\frac{1}{x} x^2 + 2x + 6 - \frac{1}{x} > 0$

$x^2 - fx - a < 0 \rightarrow (x-1)(x+1) = 0$

$b-a = 5 - (-1) = 6 \rightarrow$ بزرگترین مقدار $b-a$

$-1 < x < 1$

4- $x^3 - 3x^2 - x + 3 = 0$

$x^2(x-3) - 1(x-3) = 0 \Rightarrow (x-2)(x^2-1) \rightarrow (x-2)(x+1)(x-1)$

گفته بازه صابایی که $f(x)$ منفی که همیشه

$\frac{1+3}{2} - 2 = 1$ میان $f(x) = (x^2) - 3(x)^2 - 2 + 3 = 1 - 12 - 2 + 3 = -10$

5- $f(x) = (a-1)x^2 + (a-1)x + 1$

$a-1 < 0 \rightarrow a < 1$ I , $(a-1)^2 - f(a-1)(1) < 0 \rightarrow (a-1)(a-5) < 0$

$1 < a < 5$ II $\rightarrow I \cap II$ «تصویر مقادیر» قرار هم

6- $\frac{m^2(m^2+1)}{m-2}$

$m-2=0 \rightarrow m=2$
 $m^2=0 \rightarrow m=0$
 $m^2+1=0 \rightarrow \Delta = (0^2) - f(1)(1) = -f$

$m \in (2, +\infty)$

$(x^2 - x - 4)(x - 1)^2 \leq 0$
 $A = \frac{(x^2 - x - 4)(x - 1)^2}{(x^2 + x + 1)(x - x)^2}$

$\rightarrow x - x = 0 \rightarrow x = x$
 $\rightarrow x^2 + x + 1 = 0 \rightarrow \Delta < 0 \rightarrow$ *صورتی*
 $\rightarrow (x - 1)^2 \rightarrow x - 1 = 0 \rightarrow x = 1 \rightarrow$ *خود عبارات*
 $x^2 - x - 4 \rightarrow (x - 2)(x + 2) \rightarrow x = -2$ و $x = +2$ *صورتی*

$x^2 - x - 4$	$+2$	$-$	$-$	$-$	0	$+$
$(x - 1)^2$	$+$	$+$	0	$+$	$+$	$+$
$x^2 + x + 1$	$+$	$+$	$+$	$+$	$+$	$+$
$(x - x)^2$	$+$	$+$	$+$	0	$-$	$-$
A	$+$	$+$	0	$+$	$+$	$-$

\Rightarrow جواب: $[-2, 2] \cup [1, +\infty)$

$\frac{x^2 - 2x}{x^2 + 4} < 2 \rightarrow 2x^2 - 2x < 2(x^2 + 4) \rightarrow 2x^2 - 2x < 2x^2 + 8$
 $2x^2 - 2x - 2x^2 - 8 < 0 \rightarrow x^2 - 2x - 8 < 0 \rightarrow (x - 4)(x + 2) = 0$

$\Rightarrow (a, b) = (-2, 4) \Rightarrow b - a = 6$

$-1 < A < 0 \rightarrow$ *I* $\frac{x^2 - 4x}{x + 1} < 0 \rightarrow x(x - 4)$

$\textcircled{II} 0 < \frac{x^2 - 4x}{x + 1} + 1 \rightarrow \frac{x^2 - 4x + x + 1}{x + 1} > 0$

$I \cap II \Rightarrow$ *جواب* $(0, \frac{4}{3})$

$\frac{x^2 - 1}{x} - 2 \leq 0 \rightarrow \frac{x^2 - 1 - 2x}{x} \leq 0 \rightarrow \frac{(x - 3)(x + 2)}{x} \leq 0$

$\rightarrow (-\infty, -2] \cup (0, 3]$