

D

دوم دفتر B تکلیف 26

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

2- $\frac{-}{+} \frac{+}{-} \frac{+}{-} \frac{+}{-} \rightarrow ((k+1)x+m-1)(x-2) \rightarrow x-2m > x+1 \rightarrow m < \frac{-1}{2} \rightarrow k=3 \rightarrow x+m-1 < x-2$
 $m < -2 \rightarrow \frac{m}{2} + k = \frac{-2}{2} + 3 = 2.5$

3- $\frac{+}{-} \frac{+}{-} \frac{+}{-} \frac{+}{-} \rightarrow \frac{x^2}{x^2} \rightarrow x^2 > x+1 \rightarrow x^2 - x - 1 < 0$
 $(x-2)(x+1) < 0 \rightarrow \frac{-}{+} \frac{+}{-} \frac{+}{-} \frac{+}{-} \rightarrow (-1, 2) \rightarrow a=1, b=2 \rightarrow b-a=2-1=1$

O

4- $f(x) = x^2 - 2x + 3 \rightarrow f(x) = (x-1)(x+1)(x-3)$ $\frac{-}{+} \frac{+}{-} \frac{+}{-} \frac{+}{-}$
 $y < 0 \rightarrow (a, b) = (1, 3) \rightarrow x \in (1, 3)$
 $f(x) = (x-3)(x+1) < 0$

5- $(a-1)x^2 + (a-1)x + 1$ $\rightarrow a < 1 \rightarrow a < 1, \Delta < 0 \rightarrow (a-1)^2 - 2(a-1) < 0$
 $(a-1)(a-2) < 0 \rightarrow \frac{+}{-} \frac{+}{-} \frac{+}{-} \frac{+}{-} \rightarrow a \in (1, 2) \rightarrow a < 1 \cap a \in (1, 2) = \emptyset$

O

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

		r	
m	+		+
m+1	+		+
m-2	-		+
p	-		+

$\Rightarrow m > 2$

$$\frac{(x^2-x-4)(x-1)^2}{(x^2+x+1)(x-x)^2} < 0 \Rightarrow \frac{(x-2)(x+2)(x-1)^2}{(x^2+x+1)(x-x)^2} < 0$$

$\Rightarrow f \in (-2, 2) \cup (3, \infty)$

		-2	1	2	3	
x-2	-	-	-	-	-	+
x+2	-	0	+	+	+	+
(x-1)^2	+	+	0	+	+	+
(x-x)^2	+	+	+	0	-	-
x^2+x+1	-	+	+	+	+	+
p	+	0	-	0	-	+

$$\frac{x(x^2-x)}{x^2+2} < 0 \Rightarrow \frac{x^2-x}{x^2+2} < 0 \Rightarrow x^2-x < 0 \Rightarrow x(x-1) < 0$$

$$x^2-x < 0 \Rightarrow (x-1)(x+1) < 0 \Rightarrow -1 < x < 1 \Rightarrow (x-1)(x+1) < 0 \Rightarrow b-a, c$$

$$-1 < \frac{x^2-2x}{x+1} \Rightarrow -x-1 < x^2-2x \Rightarrow x < x^2-x+1 \Rightarrow x+2 = \frac{-b \pm \sqrt{b^2-4ac}}{2a} = \frac{1 \pm \sqrt{9-12}}{2}$$

$$\frac{x^2-2x}{x+1} < 0 \Rightarrow \frac{x(x-2)}{x+1}$$

		-1	0	2
x	-	-	0	+
x-2	-	-	-	0
x+1	-	0	+	+
p	-	0	+	-

$\Rightarrow f \in (-\infty, -1) \cup [2, \frac{1}{2}]$

$$\frac{x^2-1}{x} < 0 \Rightarrow x^2-1 < 0 \Rightarrow x^2 < 1 \Rightarrow x^2-1 < 0 \Rightarrow (x-1)(x+1) < 0$$

$\Rightarrow f \in (-1, 0) \cup (0, 1)$

		-1	0	1
p	-	+	0	-