نام و نام خانوادگی .... [illegible] .... پاسخنامه تشریحی تکلیف شماره ...۲۶... کلاس ...دهم ([illegible])...

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$a = \alpha + \beta = 1 + 3 = 4 \quad , \quad b = \alpha\beta = 3 \times 1 = 3$

$a + b = 4 + 3 = \boxed{7}$ صح

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$x - 3n = 0 \rightarrow -1 - 3n = 0 \rightarrow 3n = -1 \rightarrow n = -\frac{1}{3}$

$t = (K-2)x + m - 1$: $x < 4 \rightarrow t > 0$, $x > 4 \rightarrow t < 0$ $\rightarrow K - 2 < 0 \rightarrow K < 2 \xrightarrow{K \in N} K = 1$

$\rightarrow t = -x + m - 1 \rightarrow -4 + m - 1 = 0 \rightarrow m = 5$

$\rightarrow \frac{m}{n} + K = \frac{5}{-\frac{1}{3}} + 1 = -15 + 1 = \boxed{-14}$ صح

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$-\frac{1}{2}x^2 + 2x + 6 > \frac{7}{2}$

$\rightarrow -x^2 + 4x + 12 > 7$

$\rightarrow 0 > x^2 - 4x - 5$

$\rightarrow 0 > (x-5)(x+1)$

$\rightarrow$ -1, 5: $+ \mid - \mid +$

$\xrightarrow{\text{به ازای این بازه برقرار است}} (-1, 5) = (a, b)$

$\rightarrow a = -1 , b = 5 \rightarrow b - a = 5 - (-1) = \boxed{6}$ صح

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

$(x-1)(x+1)(x-3) < 0$ ($x > 0$ مثبت است) $\rightarrow$ 1, 3: $+ \mid - \mid +$ $\rightarrow (a, b) = (1, 3)$ → $a = 1$, $b = 3$

$\rightarrow x = \frac{a+b}{2} = \frac{3+1}{2} = 2 \rightarrow f(2) = (4-1)(2-3) = 3 \times (-1) = \boxed{-3}$ صح

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① $a - 1 < 0 \rightarrow a < 1$

② $\Delta < 0 \rightarrow (a-1)^2 - 4(a-1) \xrightarrow{t = a-1} t^2 - 4t < 0 \rightarrow 0 < t < 4 \rightarrow 0 < a - 1 < 4$

$\xrightarrow{+1} 1 < a < 5$

①∩② $= (-\infty, 1) \cap (1, 5) = \boxed{\varnothing}$ (تهی) صح

$\frac{m(m^3+m)}{m-2} = \frac{m^2(m^2+1)}{m-2} > 0$ ($\Delta<0$) $\rightarrow$ sign table: 0, 2: $- \; 0 \; - \; 0 \; +$ $\rightarrow \boxed{m = (2, +\infty)}$	۶
$\frac{(x^2-x-6)(x-1)^2}{(x^2+x+1)(2-x)^3} = \frac{(x-3)(x+2)(x-1)^2}{(x^2+x+1)(2-x)^3} \le 0$ (x^2+x+1: $\Delta<0$) $\rightarrow$ sign table: -2, 1, 2, 3: $+ \; 0 \; - \; 0 \; - \; + \; 0 \; -$ $\rightarrow \boxed{x = [-2, 2) \cup [3, +\infty)}$	۷
$\frac{3x^2-2x}{x^2+4} < 2 \rightarrow \frac{3x^2-2x}{x^2+4} - 2 < 0 \rightarrow \frac{x^2-2x-8}{x^2+4} < 0$ (x^2+4: $\Delta<0$) $\frac{(x-4)(x+2)}{x^2+4} < 0 \rightarrow$ sign table: -2, 4: $+ \; 0 \; - \; 0 \; +$ $\rightarrow x = (a, b) = (-2, 4)$: $a=-2$, $b=4$ $\rightarrow b - a = 4-(-2) = \boxed{6}$	۸
① $\frac{3x^2-4x}{x+1} < 0 \rightarrow \frac{x(3x-4)}{x+1} = \frac{x(x-\frac{4}{3})}{x+1} < 0 \rightarrow$ sign table: -1, 0, $\frac{4}{3}$: $- \; + \; 0 \; - \; 0 \; +$ $\rightarrow x = (-\infty, -1) \cup (0, \frac{4}{3})$ ② $\frac{3x^2-4x}{x+1} > -1 \rightarrow \frac{3x^2-4x}{x+1} + 1 = \frac{3x^2-3x+1}{x+1} > 0$ ($\Delta<0$) $\rightarrow$ sign table: -1: $- \; +$ $\rightarrow x = (-1, +\infty)$ $\rightarrow \boxed{x = ① \cap ②} = \boxed{(0, \frac{4}{3})}$	۹
$\frac{x^2-10}{x} \le 3 \rightarrow \frac{x^2-10}{x} - 3 \le 0 \rightarrow \frac{x^2-3x-10}{x} \le 0$ $\rightarrow \frac{(x-5)(x+2)}{x} \le 0 \rightarrow$ sign table: -2, 0, 5: $- \; 0 \; + \; - \; 0 \; +$ $\rightarrow \boxed{x = (-\infty, -2] \cup (0, 5]}$	۱۰