پریسا باقری / تکلیف شماره ۲۶ / کلاس دهم دختر A

۱

$$\frac{a \pm \sqrt{a^2-4b}}{2} = 1, 3$$

	۱		۳	
	+	۰	−	۰	+

$$\frac{a}{1} = 4 \rightsquigarrow a=4, \quad b = 3\times 1 \Rightarrow a+b = 4+3 = 7$$

(ضرب ریشه‌ها) (جمع ریشه‌ها)

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x		$*$ -1		4	
P	+	۰	+	۰	−

(-1) : ریشه مضاعف $\Rightarrow (x-3n)^2 = 0$

$x = 3n = (-1) \Rightarrow n = \frac{-1}{3}$

$(k-2)x + m - 1 = 0$

$4(k-2) + m - 1 = 0 \rightsquigarrow 4k + m = 9$

$5k + m - 11 < 0 \rightsquigarrow k - 2 < 0 \rightsquigarrow k < 2 \xrightarrow{k \in \mathbb{N}} k = 1$

$\Rightarrow m = 9 - 4k = 5$

(۱) $\Rightarrow (-x+4)(x+1)^2$

$$\frac{m}{n} + k = \frac{5}{\frac{-1}{3}} + 1 = (-14)$$

(۲) $(k-2)x + m - 1 = x - 4 \rightsquigarrow \begin{cases} k-2 = 1 \rightsquigarrow k = 3 \\ m-1 = (-4) \rightsquigarrow m = (-3) \end{cases}$

$$\frac{m}{n} + k = \frac{-3}{\frac{-1}{3}} + 3 = 12$$

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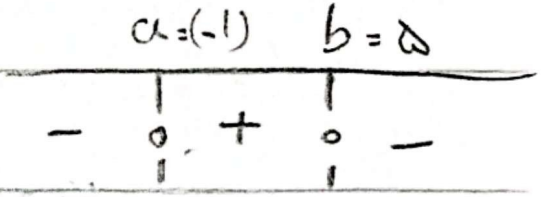
$$\frac{-1}{2}x^2+2x+6>\frac{7}{2} \rightsquigarrow \frac{-1}{2}x^2+2x+\frac{5}{2}>0$$

$$\frac{-2\pm\sqrt{4+5}}{-1}=-1,5$$



$$b-a=5-(-1)=6$$

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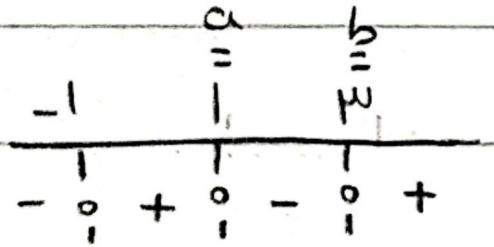
$$x^3-3x^2-x+3=x(x^2-1)-3(x^2-1)=(x-1)(x+1)(x-3)$$

$$\frac{a+b}{2}=2$$

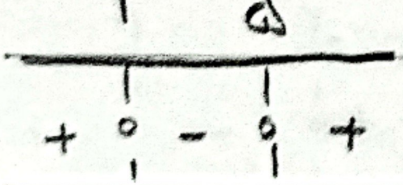


$$f(2)=(2-1)(2+1)(2-3)=-3$$

$(a-1)x^2+(a-1)x+1<0$

$a-1<0 \rightarrow a<1 \quad *_1$

$\Delta<0 \rightarrow a^2+1-2a-4a+4<0 \rightarrow (a-5)(a-1)<0$



$\rightarrow (1,5) \quad *_2$

$\Longrightarrow (-\infty,1) \cap (1,5) = \emptyset$ a به مجموعه تهی تعلق دارد.

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$$A = \frac{m(m^2+m)}{m-2} > 0$$

$m < 0 \rightsquigarrow m^2+m < 0 \rightsquigarrow m(m^2+m) > 0$
$\hookrightarrow m-2 < 0$
$\Big\} \; A < 0$

$m > 0 \rightsquigarrow m^2+m > 0 \rightsquigarrow m(m^2+m) > 0$

$m > 2 \rightsquigarrow m-2 > 0 \longrightarrow A > 0$ *

$m < 2 \rightsquigarrow m-2 < 0 \longrightarrow A < 0$

$m = 2 \rightsquigarrow A = 0$

$\boxed{m > 2 \rightsquigarrow A > 0}$

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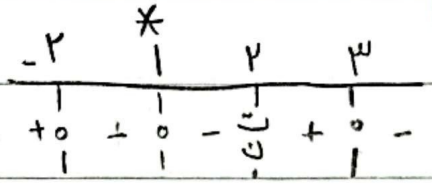
$$\frac{(x-3)(x+2)(x-1)^2}{(x^2+x+1)(2-x)^3} \leq 0$$



$[-2, 2) \cup [3, +\infty)$

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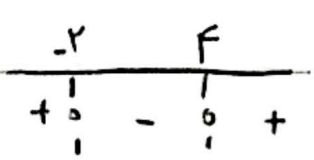
$$\frac{3x^2-2x}{x^2+4} < 2 \rightsquigarrow \frac{x^2-2x-8}{x^2+4} < 0$$

$$\frac{(x-4)(x+2)}{x^2+4} < 0 \rightsquigarrow (-2, 4)$$



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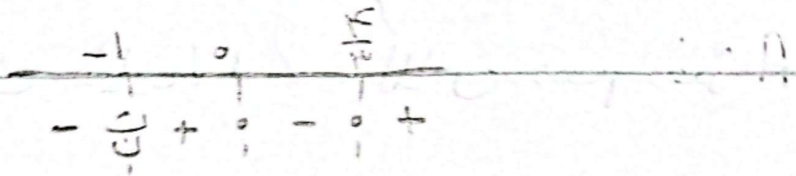
$$\frac{۳x^۲-۴x}{x+۱} < ۰$$



$$\rightarrow (-\infty, -۱) \cup (۰, \frac{۴}{۳})$$

همواره مثبت $\rightarrow ۰ < ۵$

$$-۱ < \frac{۳x^۲-۴x}{x+۱} \rightsquigarrow \frac{۳x^۲-۳x+۱}{x+۱} > ۰ \rightsquigarrow x+۱ > ۰ \rightsquigarrow x > -۱$$

$$\Longrightarrow (۰, \frac{۴}{۳})$$

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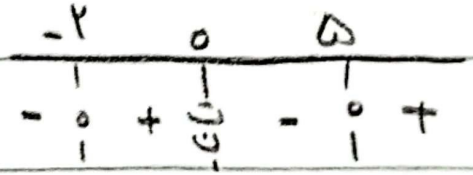
$$\frac{x^۲-۳x-۱۰}{x} \leqslant ۰ \rightsquigarrow \frac{(x-۵)(x+۲)}{x} \leqslant ۰$$



$$\Rightarrow (-\infty, -۲] \cup (۰, ۵]$$