بارکل

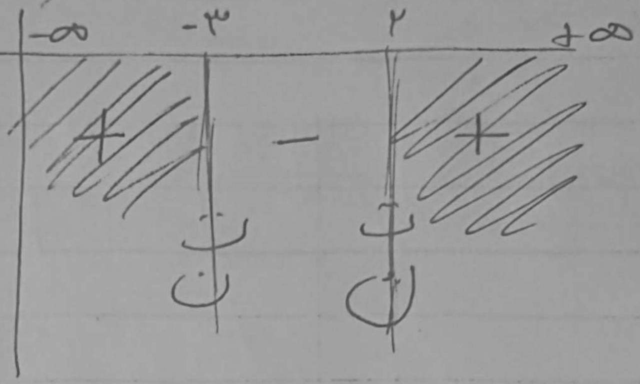
۶- الف)

$$(\cancel{x-3})(\cancel{x+2})$$

$$\frac{x^2-x-6}{x^4-13x^2+36} \geq 0$$

$$(x+3)(\cancel{x-3})(x-2)(\cancel{x+2})$$

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



ب)

$$\begin{array}{l|l} \cancel{x^3}-2x^2-5x+6 & x-1 \\ \hline \cancel{-x^3}+x^2 & x^2-x-6 \end{array}$$

$$\cancel{-x^2}-5x+6$$
$$\cancel{+x^2}-x$$

$$-6x+6$$

$$\begin{array}{l|l} x^3-2x^2-5x+6 & x-1 \\ \hline -x^3+x^2 & x^2-x-6 \end{array}$$

$$\cancel{-x^2}-5x+6$$
$$\cancel{+x^2}-x$$

$$\cancel{-6x+6}$$
$$\cancel{+6x-6}$$

باران حاتم

$\sqrt{[-x]-۲}$

$[-x]-۲ \geq ۰$

$[-x] \geq ۲$

$\downarrow$

$-x \geq ۲$ یعنی $x \leq -۲$

$(-\infty , -۲]$

$\dfrac{۵x^۲+۹}{[x]^۲-۲[x]-۳}$

$x \in [-۱ , ۰)$

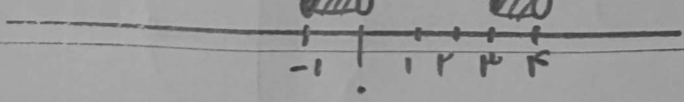
-۱

$([x]+۱)([x]-۳)$

$[x] = -۱$

$[x] = ۳$

$[۳ , ۴)$



$[-۱ , ۰) \cup [۳ , ۴)$

D

یاران هاشم

$$\begin{array}{l|l} \cancel{x^3}+2x^2-5x-6 & x+1 \\ \hline -\cancel{x^3}-x^2 & x^2+x-6 \\ \cancel{x^2}-5x-6 & (x+3)(x-2) \\ -\cancel{x^2}-x & \\ \cancel{-6x-6} & \\ \cancel{-6x-6} & \\ 0 & \end{array}$$

$x=-3$

$x=2$

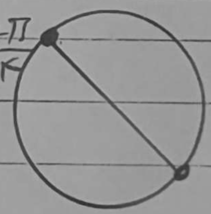
$-\infty$		-3		-2		2		3		$+\infty$
	+		+	0	−		−	0	+	
	+	0	−		−	0	+		+	
	+		−		+		−		+	

$$D_f = (-\infty , -3) \cup [-2 , 2) \cup [3 , +\infty)$$

$$\frac{\cot x+1}{\tan x+1}$$

$\tan \neq -1$

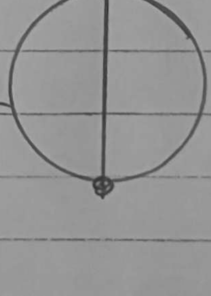
$k\pi + \frac{\pi}{4}$



$\tan x \to \frac{\sin x}{\cos x} \to \cos \neq 0$

$$D = \mathbb{R} - \{k\pi + \frac{\pi}{4} , k\pi + \frac{\pi}{2}\}$$

$k\pi + \frac{\pi}{2}$

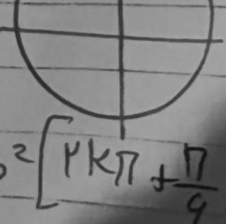


$\sqrt{1-4\sin^2 x}$ $\qquad 1-4\sin^2 x \geq 0$

$1 \geq 4\sin^2 x$

$\frac{1}{4} \geq \sin^2 x$

$\sin x \leq \frac{1}{2}$



$D_f = [2k\pi + \frac{\pi}{6} , 2k\pi + \frac{5\pi}{6}]$

$\frac{1}{2}$ $\sin x$

NEGARNOTE

ژاله حاتم

$$f(x) \begin{cases} 2x^2 - b & |x+1| \geq 2 \begin{cases} x \geq 1 \\ x \leq -3 \end{cases} \\ a + 2x & -3 \leq x \leq -1 \end{cases}$$

$$f(-3) = 2(-3)^2 - b \Rightarrow 18 - b$$

$$f(-3) = a + 2(-3) \longrightarrow a - 6$$

$$\longrightarrow 18 - b = a - 6 \longrightarrow a + b = 24$$

باران هاشم

Page: ( )

SUBJECT: Year: Month: Day:

اگر $2x^2+y^2-4x+6y+k=0$ یک تابع ناقص باشد k کدام است؟

$$\to 2x^2-4x = 2(x^2-2x) = 2((x-1)^2-1) = 2(x-1)^2-2$$

برای $y \leftarrow$

$$y^2+6y = (y^2+6y+9)-9 = (y+3)^2-9$$

جمع سه

$$f(x) = 2(x-1)^2-2+(y+3)^2-9+k = 2(x-1)^2+(y+3)^2+(k-11)$$

$$\Downarrow$$

$$f(x) = 2(x-1)^2+(y+3)^2+(k-11)$$

if $\to x=1$

$y=-3$

$$f_{min} = k-11$$

$$\Downarrow$$

$$k\in\mathbb{R}$$

$$f(x)\begin{cases} x^2+4x & x\geq 1 \\ 2x+3 & x<1 \end{cases}$$

$a^2+4a = \underbrace{2a+a}+2$

$a^2+4a = 3a+2$

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

$a^2+a-2=0$

$(a-1)^2 \to a=1$ Sen

$(1)^2+4(1) =$

$1+4=5$

$2+3=5$

$f(1)=5$

date:.. Sub:..............................

باران طاهر

$$2^{4x-x^{2}} \qquad 2^{3}$$

$$4x-x^{2}=3$$

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

$$(x-3)(x-1) \quad \begin{cases} x=3 \\ x=1 \end{cases}$$

باران هاشم

Page : (   )

SUBJECT:
Year: Month: Day:

اگر $2x^2+y^2-4x+6y+k=0$ یک تابع نامنفی باشد k کدام است؟

$\to 2x^2-4x^2 = 2(x^2-2x) = 2((x-1)^2-1) =$

$2(x-1)^2-2$

برای y ←

$y^2+6y = (y^2+6y+9)-9 = (y+3)^2-9$

جمع سه

$f(x) = 2(x-1)^2-2+(y+3)^2-9+k =$

$2(x-1)^2+(y+3)^2+(k-11)$

$\Downarrow$

$f(x) = 2(x-1)^2+(y+3)^2+(k-11)$

if $\to x=1$

$f_{min} = k-11$ $\qquad y=-3$

$\Downarrow$

$k\in\mathbb{R}$

$f(x)\begin{cases} x^2+4x & x\geq 1 \\ 2x+3 & x\ngeq 1 \end{cases}$ $\qquad a^2+4a = \underbrace{2a+a}+2$

$a^2+4a = 3a+2$

$(1)^2+4(1) =$ $\qquad a^2+4a-3a-2=0$

$1+4=5$ $\qquad a^2+a-2=0$

$2+3=5$ $\qquad (a-1)^2 \rightsquigarrow a=1$

$f(1)=5$

Senobar

D S

$$\begin{array}{l|l} x^3+2x^2-5x-6 & x+1 \\ \cline{2-2} \cancel{-x^3}-x^2 & x^2+x-6 \\ \hline x^2-5x-6 & (x+3)(x-2) \\ \cancel{-x^2}-x & \\ \hline -6x-6 & \\ -(-6x-6) & \\ \hline 0 & \end{array}$$

$x=-3$

$x=2$

	$-\infty$	-3	-2	2	3	$+\infty$
	+	+	○ −	−	○ +	
	+	● −	−	● +	+	
	×	○ −	×	○ −	×	

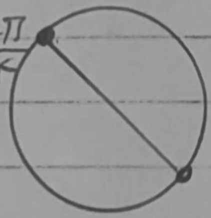
$D_f = (-\infty, -3) \cup [-2, 2) \cup [3, +\infty)$

$$\frac{\cot x+1}{\tan x+1}$$

$\tan \neq -1$

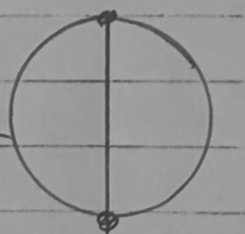
$\tan x+1 \hookrightarrow \dfrac{\sin x}{\cos x} \rightsquigarrow \cos \neq 0$

$k\pi+\frac{\pi}{4}$



$D = \mathbb{R} - \{k\pi+\frac{\pi}{4}, k\pi+\frac{\pi}{2}\}$

$k\pi+\frac{\pi}{2}$



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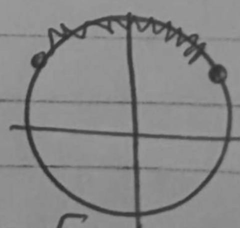
$\frac{1}{2} \geq \sin x$



$D_f = [2k\pi+\frac{\pi}{6}, 2k\pi+\frac{5\pi}{6}]$

NEGARNOTE

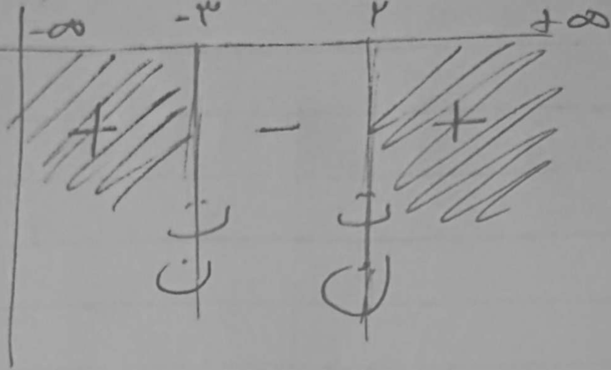
۶- الف)

$$(x-\cancel{3})(\cancel{x+4})$$

$$\frac{x^2-x-6}{x^4-13x^2+36} \geq 0$$

$$(x+3)(x-\cancel{3})(x-2)(\cancel{x+2})$$

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



ب)

$$\begin{array}{l|l} \cancel{x^3}-2x^2-5x+6 & x-1 \\ \cancel{-x^3}+x^2 & \overline{x^2-x-6} \end{array}$$

$-x^2-5x+6$

$\cancel{+x^2}+x$

$-4x+6$

$$\begin{array}{l|l} x^3-2x^2-5x+6 & x-1 \\ -x^3+x^2 & \overline{x^2-x-6} \end{array}$$

$-\cancel{x^2}-5x+6$

$\cancel{+x^2}-x$

$-6x+\cancel{6}$

$-6x\cancel{+6}$

SUBJECT:

Year: Month: Day: Page: ( )

$$f(x)\begin{cases} 2x^2-b & |x+1|\geqslant 2 \begin{cases} x\geqslant 1 \\ x\leqslant -3 \end{cases} \\ a+3x & -3\leqslant x\leqslant -1 \end{cases}$$

$$f(-3) = 2(-3) - b \Rightarrow 18-b$$

$$f(-3) = a + 3(-3) \longrightarrow a-9$$

$$\longrightarrow 18-b = a-9 \longrightarrow \boxed{a+b=27}$$