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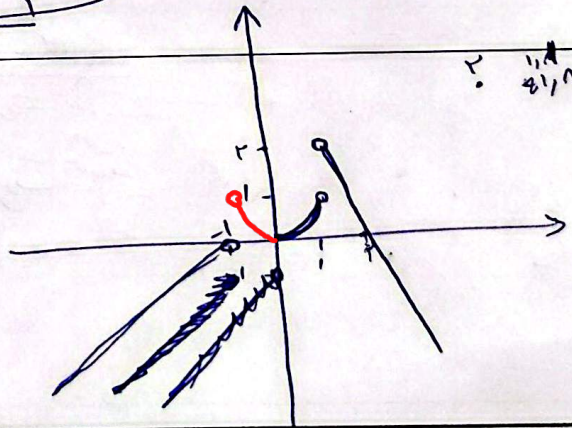
الف) $y^3 = 2x^2 - 1$ $\rightarrow y_1^3 = 2x_1^2 - 1$ $\rightarrow y_1 = y_2 \rightarrow y_1 = y_2$
 ب) $y^3 + y = 2x^2 - 1$ $\rightarrow y_1^3 + y_1 = 2x_1^2 - 1$ $\rightarrow y_1 = y_2 \rightarrow y_1 = y_2$
 ج) $y^3 + y = 2x^2 - 1$ $\rightarrow y_1^3 + y_1 = 2x_1^2 - 1$ $\rightarrow y_1 = y_2 \rightarrow y_1 = y_2$

الف) $y = x^2 - 1$ $\rightarrow y = x^2 - 1$ $\rightarrow y = x^2 - 1$
 ب) $|y| + xy = x^2 + 1$ $\rightarrow y = \pm 1$
 ج) $y^3 + x^3 = 2x^2 - 1$ $\rightarrow y_1^3 + x_1^3 = 2x_1^2 - 1$ $\rightarrow y_1 = y_2 \rightarrow y_1 = y_2$

الف) $\tan \frac{\pi}{4} = \frac{S \frac{\pi}{4}}{C \frac{\pi}{4}} = \frac{\frac{\sqrt{2}}{2}}{\frac{\sqrt{2}}{2}} = 1$ $\rightarrow \cot \frac{\pi}{4} = \frac{1}{1} = 1$
 ب) $\tan \frac{3\pi}{4} = \frac{S \frac{3\pi}{4}}{C \frac{3\pi}{4}} = \frac{\frac{\sqrt{2}}{2}}{-\frac{\sqrt{2}}{2}} = -1$ $\rightarrow \cot \frac{3\pi}{4} = \frac{1}{-1} = -1$

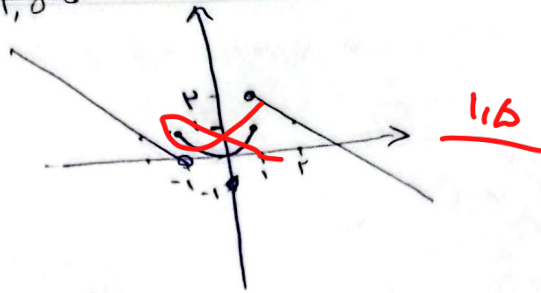
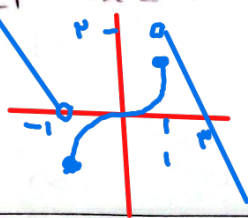
الف) $S \alpha = \frac{1}{\sqrt{2}}$ $\alpha = 30^\circ, 150^\circ$
 ب) $C \alpha = \frac{\sqrt{2}}{2}$ $\alpha = 45^\circ, 315^\circ$

$f(x) = \begin{cases} -2x+2 & x > 1 \\ x^2 & -1 < x < 1 \\ x+1 & x < -1 \end{cases}$



$y_1^3 + y_1 y_2 + y_2^3 = 0 \rightarrow y_1^3 + y_1 y_2 + y_2^3 = 0$ $\rightarrow y_1^3 + y_1 y_2 + y_2^3 = 0$ $\rightarrow y_1^3 + y_1 y_2 + y_2^3 = 0$

$$f(x) = \begin{cases} -x+3 & x > 1 \\ x^3 & -1 \leq x \leq 1 \\ -x-1 & x < -1 \end{cases}$$



الف) $y = (x-2)(x-3)(x-4)$

ب) $y = (x-2)(x-3)(x-4)$

2	3	4
-	+	-
+	-	+

2	3*	4
+	-	-
-	+	+

الف) $y = \frac{(x-2)(x-4)}{x-3}$

ب) $y = \frac{(x-2)(x-4)}{(x-3)^2}$

2	3	4
-	+	-
+	-	+

2	3*	4
+	-	-
-	+	+

الف) $y = \frac{(x-1)(x-2)}{x-3} \rightarrow \frac{(x-1)^2(x+1)}{x-3}$

ب) $y = \frac{(x-1)(x-2)}{x-3}$

2	3
-	+
+	-

1

الف) $y = \frac{x^2 - x^3}{x^2 + x + 2} = \frac{x(x-1)(x+1)}{x^2 + x + 2}$

ب) $y = \frac{x^2 + 13x + 2}{x^2 + 12x + 2}$

-1	1
+	-
-	+

1.5

✓