

$$(الف) \quad y^3 = 2x^2 - 1$$

سوال 1

$$\rightarrow \begin{cases} y_1^3 = 2x_1^2 - 1 \\ y_2^3 = 2x_2^2 - 1 \end{cases} \xrightarrow{x_1 = x_2} y_1^3 = y_2^3 \Rightarrow y_1 = y_2$$

✓ تابع آہست

$$ب) \quad y^3 + y = 3x^2 - 1$$

$$\Rightarrow \begin{cases} y_1^3 + y_1 = 3x_1^2 - 1 \\ y_2^3 + y_2 = 3x_2^2 - 1 \end{cases} \xrightarrow{x_1 = x_2} y_1^3 + y_1 = y_2^3 + y_2$$

$$\Rightarrow y_1^3 - y_2^3 + y_1 - y_2 = (y_1 - y_2)(y_1^2 + y_1y_2 + y_2^2 + y_1 + y_2)$$

$$\Rightarrow (y_1 - y_2)(y_1^2 + y_1y_2 + y_2^2 + y_1 + y_2) = 0$$

$$\Rightarrow \boxed{y_1 = y_2}$$

$$y_1^3 + y_1^2 + y_1y_2 + y_1 + 1 = y_1^3 + y_2y_1 + y_2^2 + 1 \quad (1)$$

$$(1) \rightarrow y_1 = \frac{-y_2 \pm \sqrt{\Delta}}{2} \quad \Delta = y_2^2 - 4(y_2^2 + 1) \rightarrow y_1 = \frac{-y_2 \pm \sqrt{-3y_2^2 - 4}}{2}$$

چون Δ ہمارے کو مکملہ آئے ہیں اس لیے رابطہ (1) صحیح دقت پر قرار نہیں دیتا اس لیے $y_1 = y_2$ عبارت تابع آہست

$$(الف) \quad y = x^2 - 1$$

سوال 2

$$\Rightarrow \begin{cases} y_1 = x_1^2 - 1 \\ y_2 = x_2^2 - 1 \end{cases} \xrightarrow{x_1 = x_2} y_1 = y_2$$

تابع آہست

Subject:

Date:

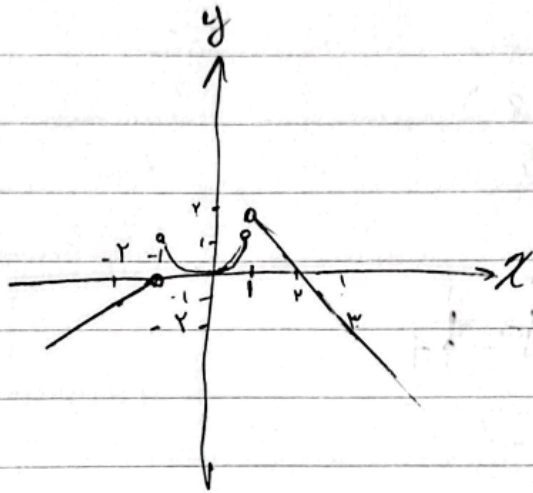
سوال ۴

در عبارت های زیره می توان چه قدری باشد $(0 < a < 2\pi)$

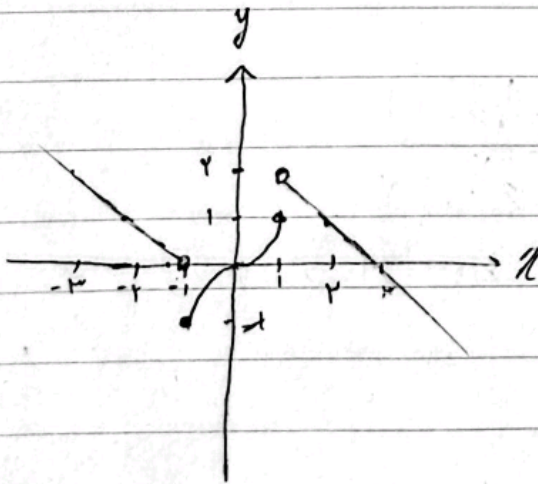
$$\sin a = \frac{1}{2} \Rightarrow a = \frac{\pi}{6}, \frac{5\pi}{6}$$

$$\cos a = \frac{\sqrt{2}}{2} \Rightarrow a = \frac{1}{4}\pi, \frac{7}{4}\pi$$

سوال ۵



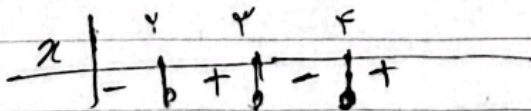
سوال ۶



(الف)

$$y = (x-2)(x-3)(x-4)$$

سوال ۷



s.a.m

Subject:

عوامل التجدد سوال ١٠ اراجاي
٩ نو شقم.

Date:

$$y = (x-2)(x-3)(x-4)$$

$$x \mid \begin{array}{ccc} 2 & 3 & 4 \\ + & - & + \end{array}$$

$$y = \frac{(x-2)(x-4)}{(x-3)}$$

سوال ١

$$x \mid \begin{array}{ccc} 2 & 3 & 4 \\ - & + & - \end{array}$$

$$y = \frac{(x-2)(x-4)}{(x-3)}$$

$$x \mid \begin{array}{ccc} 2 & 3 & 4 \\ + & - & + \end{array}$$

سوال ١٠

$$y = \frac{x^4 - x^2}{x^2 + x + 2} = \frac{x^2(x^2 - 1)}{x^2 + x + 2}$$

$$x^2 + x + 2 = 0 \Rightarrow \Delta = b^2 - 4ac = 1 - 8 = -7 \Rightarrow \text{لا يوجد جذور حقيقية}$$

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

$$x \mid \begin{array}{ccc} 1 & -1 & 1 \\ - & + & - \end{array}$$

ب)

$$y = \frac{x^2 + 3x + 4}{x^2 + 2x + 3} = \frac{x^2 + 3x + 4}{(x+1)(x+2)}$$

$$x \mid \begin{array}{ccc} -1 & -1 & 1 \\ + & - & + \end{array}$$

s.a.m

مع صفر العيب برابر با صفر نس
برای $x=1$ بخش اول

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

Date:

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

سوال ۶

$$\begin{array}{r} x^3 - 3x + 2 \quad | \quad x-1 \\ \underline{x^3 - 3x + 2} \quad x-1, 2 \end{array}$$

$$\begin{array}{r|rrrr} x & -2 & 1 & 2 \\ \hline & + & - & - & + \end{array}$$

$$\text{ب) } y = \frac{x^3 - 3x + 2}{x^2 - 4x + 3} = \frac{(x-1)(x^2)}{(x-1)(x-3)}$$

$$\begin{array}{r|rrrr} x & 1 & 2 & 2 \\ \hline & + & + & - \end{array}$$