Tugas Kalkulus 2

Nama : Refay Obeth Sudiarman Sipahutar

Nim : 312310257

Kelas : TI.C4.23

1). $\begin{cases} y = 2x + 3 \\ y = x^2 \end{cases}$

metode subtisusi

$x^2 = 2x + 3$	$x = 3 \Rightarrow y = x^2$	$x = -1 \Rightarrow y = x^2$
$x^2 - 2x - 3 = 0$	$y = 3^2$	$y = (-1)^2$
$(x-3)(x+1) = 0$	$y = 9$	$y = 1$
$x = 3 \quad x = -1$	$(3,9)$	$(-1,1)$

Hp : $\{(-1,1), (3,9)\}$

2). $\begin{cases} y = x + 3 \\ y = x^2 - 5x + 8 \end{cases}$

metode subtitusi

$x + 3 = x^2 - 5x + 8$	untuk $x = 5$	untuk $x = 1$
$0 = x^2 - 5x + 8 - x - 3$	$y = x + 3$	$y = x + 3$
$0 = x^2 - 6x + 5$	$y = 5 + 3$	$y = 1 + 3$
$(x-5)(x-1) = 0$	$y = 8$	$y = 4$
$x = 5 \quad x = 1$	$(5,8)$	$(1,4)$

Hp. $\{(5,8), (1,4)\}$

3). $\begin{cases} x + y = 3 \\ y = x^2 - 4x + 3 \end{cases}$

$x + x^2 - 4x + 3 = 3$

$x = 0$

$x = 3$

$y = 0^2 - 4 \times 0 + 3$

$y = 3^2 - 4 \times 3 + 3$

$y = 3$

$y = 0$

$Hp = \begin{pmatrix} x_1, y_1 \\ x_2, y_2 \end{pmatrix} = \begin{pmatrix} 0,3 \\ 3,0 \end{pmatrix}$

4). $\begin{cases} y = -2x + 1 \\ y = x^2 - 4x + 3 \end{cases}$

$-2x + 1 = x^2 - 4x + 3$

$x^2 + 2x + 2 = 0$

$(x+2)(x+2) = 0$

$x = 2$ atau $x = 2$

Hp $= \{2, 2\}$

5). $\begin{cases} y = x - 1 \\ 2xy + y^2 - 5y - 6 = 0 \end{cases}$

$\Rightarrow 2x \times (-1) + (x-1)^2 - 5(x-1) - 6 = 0$

Sederhanakan

$x = 0$

$x = 3$

$y = 0 - 1 \rightarrow y = -1$

$y = 3 - 1 \rightarrow y = 2$

Sederhanakan

$\begin{cases} -1 = 0 - 1 \\ 2 \times 0 \times (-1) + (-1)^2 - 5 \times (-1) - 6 = 0 \end{cases}$

$\begin{cases} 2 = 3 - 1 \\ 2 \times 3 \times 2 + 2^2 - 5 \times 2 - 6 = 0 \end{cases}$

Hp $\begin{pmatrix} x_1, y_1 \\ x_2, y_2 \end{pmatrix} = \begin{pmatrix} 0, -1 \\ 3, 2 \end{pmatrix}$

6). $\begin{cases} 3x - y - 16 = 0 \\ x^2 + y^2 - 6x + 4y - 12 = 0 \end{cases}$

$\Rightarrow \begin{cases} y = 3x - 16 \\ x^2 + y^2 - 6x + 4y - 12 = 0 \end{cases}$

$x^2 + (3x - 16)^2 - 6x + 4(3x - 16) - 12 = 0$

$x = 3$

$x = 6$

$y = 3 \times 3 - 16$

$y = 3 \times 6 - 16$

Hp $\begin{Bmatrix} x_1, y_1 \\ x_2, y_2 \end{Bmatrix} = \begin{pmatrix} 3, 7 \\ 6, 2 \end{pmatrix}$

$y = -7$

$y = 2$