

LEMBAR KERJA

Mata Pelajaran : Matematika
Materi Pokok : Statistika
Kelas/Semester : XI/II
Waktu : 20 menit

NAMA :

NO/KLS:

REFLEKSI (PENCERMINAN)

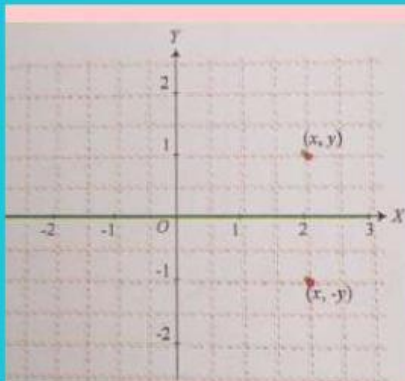
Tentukan matriks dari refleksi berikut ini!

Gambar

Pemetaan

Matriks

Pencerminan terhadap sumbu x



$$(x, y) \rightarrow (x, -y)$$

$$x' = x = 1(x) + 0(y)$$

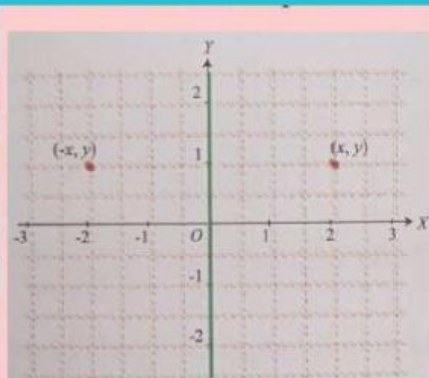
$$y' = -y = 0(x) + (-1)(y)$$

$$\begin{bmatrix} x' \\ y' \end{bmatrix} = \begin{bmatrix} 1 & 0 \\ 0 & -1 \end{bmatrix} \begin{bmatrix} x \\ y \end{bmatrix}$$

Matriks transformasinya
adalah

$$\begin{bmatrix} 1 & 0 \\ 0 & -1 \end{bmatrix}$$

Pencerminan terhadap sumbu y



$$(x, y) \rightarrow (-x, y)$$

$$x' = -x = -1(x) + 0(y)$$

$$y' = y = 0(x) + 1(y)$$

$$\begin{bmatrix} x' \\ y' \end{bmatrix} = \begin{bmatrix} \dots & \dots \\ \dots & \dots \end{bmatrix} \begin{bmatrix} x \\ y \end{bmatrix}$$

Matriks transformasinya
adalah

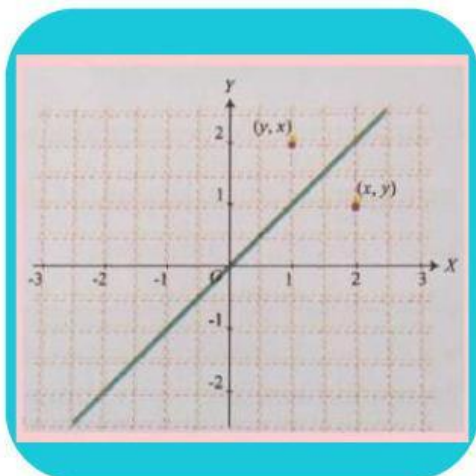
$$\begin{bmatrix} \dots & \dots \\ \dots & \dots \end{bmatrix}$$

Gambar

Pemetaan

Matriks

Pencerminan terhadap sumbu $x=y$



$$(x,y) \rightarrow (\dots, \dots)$$

$$x' = \dots = \dots(x) + \dots(y)$$

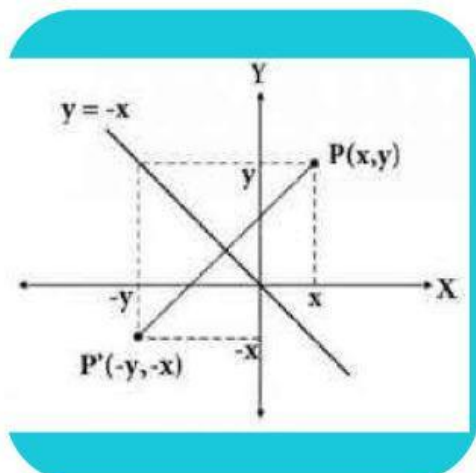
$$y' = \dots = \dots(x) + \dots(y)$$

$$\begin{bmatrix} x' \\ y' \end{bmatrix} = \begin{bmatrix} \dots & \dots \\ \dots & \dots \end{bmatrix} \begin{bmatrix} x \\ y \end{bmatrix}$$

Matriks transformasinya adalah

$$\begin{bmatrix} \dots & \dots \\ \dots & \dots \end{bmatrix}$$

Pencerminan terhadap sumbu $x=-y$



$$(x,y) \rightarrow (\dots, \dots)$$

$$x' = \dots$$

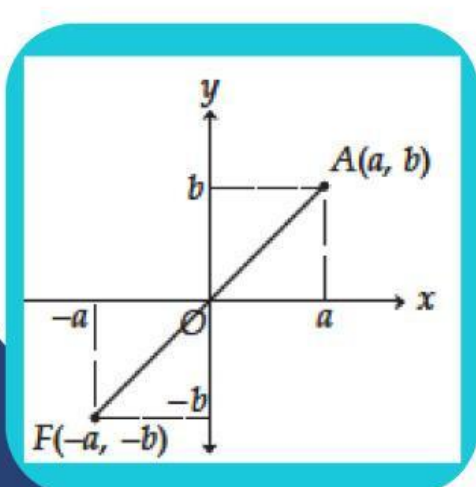
$$y' = \dots$$

$$\begin{bmatrix} x' \\ y' \end{bmatrix} = \begin{bmatrix} \dots & \dots \\ \dots & \dots \end{bmatrix} \begin{bmatrix} x \\ y \end{bmatrix}$$

Matriks transformasinya adalah ...

$$\begin{bmatrix} \dots & \dots \\ \dots & \dots \end{bmatrix}$$

Pencerminan terhadap titik pusat (0,0)



$$(x,y) \rightarrow (\dots, \dots)$$

$$x' = \dots$$

$$y' = \dots$$

$$\begin{bmatrix} x' \\ y' \end{bmatrix} = \begin{bmatrix} \dots & \dots \\ \dots & \dots \end{bmatrix} \begin{bmatrix} x \\ y \end{bmatrix}$$

Matriks transformasinya adalah ...

$$\begin{bmatrix} \dots & \dots \\ \dots & \dots \end{bmatrix}$$

Aktivitas

Jika diketahui sebuah titik A (2, -1) di refleksikan terhadap

a.Sumbu - X

b.Sumbu - Y

c.Sumbu X = Y

d. Sumbu X = -Y

Pencerminan terhadap sumbu x

$$A' = \begin{bmatrix} a \\ b \end{bmatrix} = \begin{bmatrix} 1 & 0 \\ 0 & -1 \end{bmatrix} \begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} 1 & 0 \\ 0 & -1 \end{bmatrix} \begin{bmatrix} 2 \\ -1 \end{bmatrix} = \begin{bmatrix} 2 + 0 \\ 0 - 1 \end{bmatrix} = \begin{bmatrix} 2 \\ -1 \end{bmatrix}$$

Pencerminan terhadap sumbu y

$$A' = \begin{bmatrix} a \\ b \end{bmatrix} = \begin{bmatrix} -1 & 0 \\ 0 & 1 \end{bmatrix} \begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} -1 & 0 \\ 0 & 1 \end{bmatrix} \begin{bmatrix} \square \\ \square \end{bmatrix} = \begin{bmatrix} \dots + \dots \\ \dots + \dots \end{bmatrix} = \begin{bmatrix} \square \\ \square \end{bmatrix}$$

Pencerminan terhadap sumbu x = y

$$A' = \begin{bmatrix} a \\ b \end{bmatrix} = \begin{bmatrix} \square & \square \\ \square & \square \end{bmatrix} \begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} \square & \square \\ \square & \square \end{bmatrix} \begin{bmatrix} \square \\ \square \end{bmatrix} = \begin{bmatrix} \dots + \dots \\ \dots + \dots \end{bmatrix} = \begin{bmatrix} \square \\ \square \end{bmatrix}$$

Pencerminan terhadap sumbu x = - y

$$A' = \begin{bmatrix} a \\ b \end{bmatrix} = \begin{bmatrix} \square & \square \\ \square & \square \end{bmatrix} \begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} \square & \square \\ \square & \square \end{bmatrix} \begin{bmatrix} \square \\ \square \end{bmatrix} = \begin{bmatrix} \dots + \dots \\ \dots + \dots \end{bmatrix} = \begin{bmatrix} \square \\ \square \end{bmatrix}$$