

1. Tentukan hasil perkalian matriks berikut

a. $\begin{pmatrix} 3 & 1 \\ 5 & 2 \end{pmatrix} \times \begin{pmatrix} -2 & -3 \\ 3 & 4 \end{pmatrix} = \begin{pmatrix} \underline{\hspace{1cm}} + 3 & -9 + \underline{\hspace{1cm}} \\ -10 + \underline{\hspace{1cm}} & \underline{\hspace{1cm}} + 8 \end{pmatrix} = \begin{pmatrix} \underline{\hspace{1cm}} & \underline{\hspace{1cm}} \\ \underline{\hspace{1cm}} & \underline{\hspace{1cm}} \end{pmatrix}$

b. $\begin{pmatrix} 1 & 0 \\ 9 & -2 \\ -4 & 7 \end{pmatrix} \times \begin{pmatrix} 2 & -1 & 3 \\ 6 & 4 & -5 \end{pmatrix} = \begin{pmatrix} 2 + \underline{\hspace{1cm}} & -1 + \underline{\hspace{1cm}} & 0 + \underline{\hspace{1cm}} \\ \underline{\hspace{1cm}} + (-12) & \underline{\hspace{1cm}} + (-8) & \underline{\hspace{1cm}} + 10 \\ -8 + \underline{\hspace{1cm}} & 4 + \underline{\hspace{1cm}} & -12 + \underline{\hspace{1cm}} \end{pmatrix} = \begin{pmatrix} \underline{\hspace{1cm}} & \underline{\hspace{1cm}} & \underline{\hspace{1cm}} \\ \underline{\hspace{1cm}} & \underline{\hspace{1cm}} & \underline{\hspace{1cm}} \\ \underline{\hspace{1cm}} & \underline{\hspace{1cm}} & \underline{\hspace{1cm}} \end{pmatrix}$

c. $\begin{pmatrix} 4 & -1 & 0 \\ 5 & 1 & -2 \end{pmatrix} \times \begin{pmatrix} 2 & 3 \\ 6 & -2 \\ -3 & 0 \end{pmatrix} = \begin{pmatrix} 8 + (-6) + \underline{\hspace{1cm}} & 12 + \underline{\hspace{1cm}} + \underline{\hspace{1cm}} \\ 10 + \underline{\hspace{1cm}} + \underline{\hspace{1cm}} & \underline{\hspace{1cm}} + (-2) + \underline{\hspace{1cm}} \end{pmatrix} = \begin{pmatrix} \underline{\hspace{1cm}} & \underline{\hspace{1cm}} \\ \underline{\hspace{1cm}} & \underline{\hspace{1cm}} \end{pmatrix}$

d. $\begin{pmatrix} 3 & 0 \\ 5 & -1 \\ 0 & 4 \end{pmatrix} \times \begin{pmatrix} 1 \\ -4 \end{pmatrix} = \begin{pmatrix} 3 + \underline{\hspace{1cm}} \\ \underline{\hspace{1cm}} + 4 \\ \underline{\hspace{1cm}} + \underline{\hspace{1cm}} \end{pmatrix} = \begin{pmatrix} \underline{\hspace{1cm}} \\ \underline{\hspace{1cm}} \\ \underline{\hspace{1cm}} \end{pmatrix}$

2. Tentukan determinan matriks berikut!

a. $A = \begin{pmatrix} -5 & 4 \\ -7 & 6 \end{pmatrix} = (-5) \cdot \underline{\hspace{1cm}} - \underline{\hspace{1cm}} \cdot (-7) = \underline{\hspace{1cm}} - \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

b. $\begin{vmatrix} 1 & -2 \\ 3 & 2 \end{vmatrix} = 1 \cdot \underline{\hspace{1cm}} - \underline{\hspace{1cm}} \cdot 3 = \underline{\hspace{1cm}} - \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

c. $B = \begin{pmatrix} 1 & -1 & 0 \\ 0 & -2 & -1 \\ 4 & 3 & 2 \end{pmatrix} = \begin{pmatrix} 1 & -1 & 0 \\ 0 & -2 & -1 \\ 4 & 3 & 2 \end{pmatrix} \begin{matrix} 1 & 0 \\ \underline{\hspace{1cm}} & \underline{\hspace{1cm}} \\ \underline{\hspace{1cm}} & \underline{\hspace{1cm}} \end{matrix}$
 $= (-4 + \underline{\hspace{1cm}} + \underline{\hspace{1cm}}) - (0 + \underline{\hspace{1cm}} + \underline{\hspace{1cm}}) = \underline{\hspace{1cm}} - \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

d. $\begin{vmatrix} 2 & 1 & 5 \\ 3 & 2 & -2 \\ 0 & -3 & -4 \end{vmatrix} = \begin{vmatrix} 2 & 1 & 5 \\ 3 & 2 & -2 \\ 0 & -3 & -4 \end{vmatrix} \begin{matrix} 2 & 1 \\ \underline{\hspace{1cm}} & \underline{\hspace{1cm}} \\ \underline{\hspace{1cm}} & \underline{\hspace{1cm}} \end{matrix}$
 $= (-16 + \underline{\hspace{1cm}} + \underline{\hspace{1cm}}) - (0 + \underline{\hspace{1cm}} + \underline{\hspace{1cm}}) = \underline{\hspace{1cm}} - \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

3. Tentukan nilai x dari persamaan berikut!

a. $\begin{vmatrix} 3 & 2 \\ x & 4 \end{vmatrix} = 0$

Jawab: $3 \cdot \underline{\hspace{1cm}} - \underline{\hspace{1cm}} \cdot x = 0$

$\underline{\hspace{1cm}} - \underline{\hspace{1cm}}x = \underline{\hspace{1cm}}$

$-2x = 0 - \underline{\hspace{1cm}}$

$-2x = \underline{\hspace{1cm}}$

$x = \frac{\underline{\hspace{1cm}}}{-2}$

$x = \underline{\hspace{1cm}}$

b. $\begin{vmatrix} 2x & 3 \\ -5 & -4 \end{vmatrix} = 7x$

Jawab: $2x \cdot \underline{\hspace{1cm}} - \underline{\hspace{1cm}} \cdot (-5) = 7x$

$\underline{\hspace{1cm}} - \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

$-8x - 7x = \underline{\hspace{1cm}}$

$\underline{\hspace{1cm}}x = \underline{\hspace{1cm}}$

$x = \frac{\underline{\hspace{1cm}}}{\underline{\hspace{1cm}}}$

$x = \underline{\hspace{1cm}}$