1. Diberi

(a)

$A = \begin{bmatrix} 3 & -4 \\ 2 & 7 \end{bmatrix}$

Nyatakan

Bilangan Baris	
Bilangan Lajur	
Peringkat Matriks	
Unsur a_{12}	
Unsur a_{21}	

(b)

$B = \begin{bmatrix} 9 & 1 & -8 \\ -5 & 3 & 6 \end{bmatrix}$

Nyatakan

Bilangan Baris	
Bilangan Lajur	
Peringkat Matriks	
Unsur b_{13}	
Unsur b_{22}	

2. Tentukan sama ada pasangan Matriks dibawah adalah Matriks sama atau tidak.

Pasangan matriks	Sama / Tidak
$[8 \quad 3]$ dan $[8 \quad 3]$	
$[8 \quad 3]$ dan $\begin{bmatrix} 8 \\ 3 \end{bmatrix}$	
$\begin{bmatrix} \frac{3}{2} \\ 0.5 \end{bmatrix}$ dan $\begin{bmatrix} 1.5 \\ 0.5 \end{bmatrix}$	
$\begin{bmatrix} 4 & 7 \\ -5 & 2 \end{bmatrix}$ dan $\begin{bmatrix} 4 & -7 \\ 5 & 2 \end{bmatrix}$	

3. Hitung

(a)

$[7 \quad 5] + [1 \quad 2] = [7 + 1 \qquad]$

$= [\ 8 \quad]$

(b)

$\begin{bmatrix} 3 \\ 6 \end{bmatrix} + \begin{bmatrix} 4 \\ -8 \end{bmatrix} = \begin{bmatrix} 3 + 4 \end{bmatrix}$

$= \begin{bmatrix} 7 \end{bmatrix}$

(c)

$\begin{bmatrix} -9 & 5 \\ 2 & 6 \end{bmatrix} + \begin{bmatrix} 7 & 1 \\ -6 & 2 \end{bmatrix}$

$= \begin{bmatrix} \qquad \end{bmatrix}$

$= \begin{bmatrix} \qquad \end{bmatrix}$

(e)

$[7 \quad 5] - [1 \quad 2] = [7 - 1 \qquad]$

$= [6 \quad]$

(f)

$\begin{bmatrix} 3 \\ 6 \end{bmatrix} - \begin{bmatrix} 4 \\ -8 \end{bmatrix} = \begin{bmatrix} 3 - 4 \end{bmatrix}$

$= \begin{bmatrix} -1 \end{bmatrix}$

(g)

$\begin{bmatrix} -9 & 5 \\ 2 & 6 \end{bmatrix} - \begin{bmatrix} 7 & 1 \\ -6 & 2 \end{bmatrix}$

$= \begin{bmatrix} \qquad \end{bmatrix}$

$= \begin{bmatrix} \qquad \end{bmatrix}$

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4. Selesaikan.

(a)

$[2 \quad 6] + [x \quad 3] = [4 \quad 9]$

$[\qquad 6 + 3] = [4 \quad 9]$

$= 4$

$= 4$

$x =$

(b)

$\begin{bmatrix} 7 \\ -3 \end{bmatrix} + \begin{bmatrix} 1 \\ x \end{bmatrix} = \begin{bmatrix} 8 \\ 2 \end{bmatrix}$

$\begin{bmatrix} 7 + 1 \end{bmatrix} = \begin{bmatrix} 8 \\ 2 \end{bmatrix}$

$= 2$

$= 2$

$x =$

(c)

$\begin{bmatrix} 6 & -4 \\ -1 & 8 \end{bmatrix} + \begin{bmatrix} -2 & x \\ 7 & y \end{bmatrix} = \begin{bmatrix} 4 & 4 \\ 6 & 5 \end{bmatrix}$

$\begin{bmatrix} 6 + (-2) & \\ -1 + 7 & \end{bmatrix} = \begin{bmatrix} 4 & 4 \\ 6 & 5 \end{bmatrix}$

Untuk x,

$= 4$

$x = 4$

$x =$

Untuk y,

$= 5$

$y = 5$

$y =$

(e)

$[x \quad 6] - [-2 \quad 1] = [9 \quad 5]$

$[\qquad 6 - 1] = [9 \quad 5]$

$= 9$

$= 9$

$x =$

(f)

$\begin{bmatrix} 1 \\ -4 \end{bmatrix} - \begin{bmatrix} 3 \\ x \end{bmatrix} = \begin{bmatrix} -2 \\ 3 \end{bmatrix}$

$\begin{bmatrix} 1 - 3 \end{bmatrix} = \begin{bmatrix} -2 \\ 3 \end{bmatrix}$

$= 3$

$= 3$

$-x =$

$x = -7$

(g)

$\begin{bmatrix} x & 9 \\ 8 & y \end{bmatrix} - \begin{bmatrix} 5 & 4 \\ -1 & x \end{bmatrix} = \begin{bmatrix} -2 & 5 \\ 9 & 3 \end{bmatrix}$

$\begin{bmatrix} & 9 - 4 \\ 8 - (-1) & \end{bmatrix} = \begin{bmatrix} -2 & 5 \\ 9 & 3 \end{bmatrix}$

Untuk x,

$= -2$

$x = -2$

$x =$

Untuk y,

$= 3$

$= 3$

$y = 3$

$y =$

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LIVEWORKSHEETS

5. Berdasarkan pasangan Matriks dibawah, adakah pendaraban antara dua matriks boleh berlaku atau tidak.

	Pasangan matriks	Boleh / Tidak
(a)	$\begin{bmatrix} 1 & 2 \end{bmatrix}\begin{bmatrix} 3 & 4 \end{bmatrix}$	
(b)	$\begin{bmatrix} 1 \\ 2 \end{bmatrix}\begin{bmatrix} 3 \\ 4 \end{bmatrix}$	
(c)	$\begin{bmatrix} 1 & 2 \end{bmatrix}\begin{bmatrix} 3 \\ 4 \end{bmatrix}$	
(d)	$\begin{bmatrix} 1 \\ 2 \end{bmatrix}\begin{bmatrix} 3 & 4 \end{bmatrix}$	
(e)	$\begin{bmatrix} 1 & 2 \end{bmatrix}\begin{bmatrix} 3 & 4 \\ 5 & 6 \end{bmatrix}$	
(f)	$\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}\begin{bmatrix} 5 & 6 \end{bmatrix}$	
(g)	$\begin{bmatrix} 1 \\ 2 \end{bmatrix}\begin{bmatrix} 3 & 5 \\ 4 & 6 \end{bmatrix}$	
(h)	$\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}\begin{bmatrix} 5 \\ 6 \end{bmatrix}$	
(i)	$\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}\begin{bmatrix} 5 & 6 \\ 7 & 8 \end{bmatrix}$	
(j)	$\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}\begin{bmatrix} 5 & 6 & 7 \\ 8 & 9 & 0 \end{bmatrix}$	
(k)	$\begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \end{bmatrix}\begin{bmatrix} 7 & 8 \\ 9 & 0 \end{bmatrix}$	

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6. Hitung.

(a) $2\begin{bmatrix} 3 \\ -5 \end{bmatrix}$

$= \begin{bmatrix} (\ 2\ )(\ 3\ ) \\ (\ 2\ )(\ -5\ ) \end{bmatrix}$

$= \begin{bmatrix} \quad \end{bmatrix}$

(b) $\frac{1}{2}\begin{bmatrix} 3 & 6 \\ -4 & 10 \end{bmatrix}$

$= \begin{bmatrix} (\quad)(\quad) & (\quad)(\quad) \\ (\quad)(\quad) & (\quad)(\quad) \end{bmatrix}$ *jika pecahan, taip bentuk x/y.

$= \begin{bmatrix} \quad \end{bmatrix}$ *jika pecahan, taip bentuk x/y.

(c) $[6 \quad 3]\begin{bmatrix} 2 \\ 4 \end{bmatrix}$

$= [\,(\quad)(\quad) + (\quad)(\quad)\,]$

$= [\quad]$

(d) $\begin{bmatrix} 2 \\ 4 \end{bmatrix}[6 \quad 3]$

$= \begin{bmatrix} (\quad)(\quad) & (\quad)(\quad) \\ (\quad)(\quad) & (\quad)(\quad) \end{bmatrix}$

$= \begin{bmatrix} \quad \end{bmatrix}$

(e) $[3 \quad 2]\begin{bmatrix} 8 & 4 \\ -2 & 5 \end{bmatrix}$

$= [(\quad)(\quad) + (\quad)(\quad) \qquad (\quad)(\quad) + (\quad)(\quad)]$

$= [\quad]$

(f) $\begin{bmatrix} 6 & -1 \\ 7 & 3 \end{bmatrix}\begin{bmatrix} 5 \\ 9 \end{bmatrix}$

$= \begin{bmatrix} (\quad)(\quad) + (\quad)(\quad) \\ (\quad)(\quad) + (\quad)(\quad) \end{bmatrix}$

$= \begin{bmatrix} \quad \end{bmatrix}$

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LIVEWORKSHEETS

(g) $\begin{bmatrix} -5 & 8 \\ 2 & -6 \end{bmatrix}\begin{bmatrix} 3 & 1 \\ 4 & 3 \end{bmatrix}$

$= \begin{bmatrix} (\quad)(\quad)+(\quad)(\quad) & (\quad)(\quad)+(\quad)(\quad) \\ (\quad)(\quad)+(\quad)(\quad) & (\quad)(\quad)+(\quad)(\quad) \end{bmatrix}$

$= \begin{bmatrix} \quad & \quad \\ \quad & \quad \end{bmatrix}$

(h) $\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}\begin{bmatrix} 3 & 4 & 2 \\ -1 & 2 & 1 \end{bmatrix}$

$= \begin{bmatrix} (\quad)(\quad)+(\quad)(\quad) & (\quad)(\quad)+(\quad)(\quad) & (\quad)(\quad)+(\quad)(\quad) \\ (\quad)(\quad)+(\quad)(\quad) & (\quad)(\quad)+(\quad)(\quad) & (\quad)(\quad)+(\quad)(\quad) \end{bmatrix}$

$= \begin{bmatrix} \quad & \quad & \quad \\ \quad & \quad & \quad \end{bmatrix}$

(i) $\begin{bmatrix} 2 & 4 \\ 6 & 8 \\ 0 & 2 \end{bmatrix}\begin{bmatrix} -3 & -4 \\ 2 & 2 \end{bmatrix}$

$= \begin{bmatrix} (\quad)(\quad)+(\quad)(\quad) & (\quad)(\quad)+(\quad)(\quad) \\ (\quad)(\quad)+(\quad)(\quad) & (\quad)(\quad)+(\quad)(\quad) \\ (\quad)(\quad)+(\quad)(\quad) & (\quad)(\quad)+(\quad)(\quad) \end{bmatrix}$

$= \begin{bmatrix} \quad & \quad \\ \quad & \quad \\ \quad & \quad \end{bmatrix}$

7. Tentukan sama ada matriks berikut mempunyai matriks songsang atau tidak.

(a)

$\begin{bmatrix} 2 & 3 \\ 2 & 4 \end{bmatrix}$

$ad - bc = (\quad)(\quad) - (\quad)(\quad)$

$= \quad -$

$=$

Maka, matriks ini matriks songsang. (ada / tiada)

(b)

$\begin{bmatrix} 2 & 6 \\ 3 & 9 \end{bmatrix}$

$ad - bc = (\quad)(\quad) - (\quad)(\quad)$

$= \quad -$

$=$

Maka, matriks ini matriks songsang. (ada / tiada)

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LIVEWORKSHEETS

8. Matriks berikut tidak mempunyai matriks songsang. Tentukan nilai x.

(a)

$$\begin{bmatrix} 3 & 4 \\ 6 & x \end{bmatrix}$$

$$ad - bc = 0$$

$$(\quad)(\quad) - (\quad)(\quad) = 0$$

$$- \quad = 0$$

$$x =$$

$$x =$$

$$x =$$

(b)

$$\begin{bmatrix} 4 & 6 \\ x & 3 \end{bmatrix}$$

$$ad - bc = 0$$

$$(\quad)(\quad) - (\quad)(\quad) = 0$$

$$- \quad = 0$$

$$x =$$

$$x =$$ *jika pecahan, taip bentuk x/y.

$$x =$$

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9. Hitung matriks songsang bagi matriks di bawah.

(a)

$A = \begin{bmatrix} 2 & 3 \\ 2 & 4 \end{bmatrix}$

$A^{-1} = \dfrac{1}{(\quad)(\quad) - (\quad)(\quad)} \begin{bmatrix} \quad & \quad \\ \quad & \quad \end{bmatrix}$

$= \dfrac{1}{\quad} \begin{bmatrix} \quad & \quad \\ \quad & \quad \end{bmatrix}$ *jika pecahan, taip bentuk x/y.

$= \begin{bmatrix} \quad & \quad \\ \quad & \quad \end{bmatrix}$ *jika pecahan, taip bentuk x/y.

(b)

$B = \begin{bmatrix} 6 & 3 \\ 9 & 5 \end{bmatrix}$

$B^{-1} = \dfrac{1}{(\quad)(\quad) - (\quad)(\quad)} \begin{bmatrix} \quad & \quad \\ \quad & \quad \end{bmatrix}$

$= \dfrac{1}{\quad} \begin{bmatrix} \quad & \quad \\ \quad & \quad \end{bmatrix}$ *jika pecahan, taip bentuk x/y.

$= \begin{bmatrix} \quad & \quad \\ \quad & \quad \end{bmatrix}$ *jika pecahan, taip bentuk x/y.

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LIVEWORKSHEETS

10. Selesaikan persamaan linear serentak berikut dengan menggunakan kaedah matriks.

(a)
$4x + 5y = 23$
$2x + 3y = 13$

$$\begin{bmatrix} \quad & \quad \\ \quad & \quad \end{bmatrix}\begin{bmatrix} \quad \\ \quad \end{bmatrix} = \begin{bmatrix} \quad \\ \quad \end{bmatrix}$$

$$\begin{bmatrix} \quad \\ \quad \end{bmatrix} = \frac{1}{(\quad)(\quad) - (\quad)(\quad)}\begin{bmatrix} \quad & \quad \\ \quad & \quad \end{bmatrix}\begin{bmatrix} \quad \\ \quad \end{bmatrix}$$

$$\begin{bmatrix} \quad \\ \quad \end{bmatrix} = \frac{1}{\quad}\begin{bmatrix} (\quad)(\quad) + (\quad)(\quad) \\ (\quad)(\quad) + (\quad)(\quad) \end{bmatrix}$$

$$\begin{bmatrix} \quad \\ \quad \end{bmatrix} = \frac{1}{\quad}\begin{bmatrix} \quad \\ \quad \end{bmatrix}$$

$$\begin{bmatrix} \quad \\ \quad \end{bmatrix} = \begin{bmatrix} \quad \\ \quad \end{bmatrix}$$

Maka, $x =$, $y =$.

(b)
$3x + 2y = 16$
$7x - 4y = -6$

$$\begin{bmatrix} \quad & \quad \\ \quad & \quad \end{bmatrix}\begin{bmatrix} \quad \\ \quad \end{bmatrix} = \begin{bmatrix} \quad \\ \quad \end{bmatrix}$$

$$\begin{bmatrix} \quad \\ \quad \end{bmatrix} = \frac{1}{(\quad)(\quad) - (\quad)(\quad)}\begin{bmatrix} \quad & \quad \\ \quad & \quad \end{bmatrix}\begin{bmatrix} \quad \\ \quad \end{bmatrix}$$

$$\begin{bmatrix} \quad \\ \quad \end{bmatrix} = \frac{1}{\quad}\begin{bmatrix} (\quad)(\quad) + (\quad)(\quad) \\ (\quad)(\quad) + (\quad)(\quad) \end{bmatrix}$$

$$\begin{bmatrix} \quad \\ \quad \end{bmatrix} = \frac{1}{\quad}\begin{bmatrix} \quad \\ \quad \end{bmatrix}$$

$$\begin{bmatrix} \quad \\ \quad \end{bmatrix} = \begin{bmatrix} \quad \\ \quad \end{bmatrix}$$

Maka, $x =$, $y =$.

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LIVEWORKSHEETS

SPM SEBENAR 2023 (SOALAN 15)

(a) Diberi bahawa $\begin{bmatrix} 7 & -2 \\ x+3 & 4 \end{bmatrix} = \begin{bmatrix} 7 & 5y \\ -1 & 4 \end{bmatrix}$.
Tentukan nilai x dan nilai y.
It is given that $\begin{bmatrix} 7 & -2 \\ x+3 & 4 \end{bmatrix} = \begin{bmatrix} 7 & 5y \\ -1 & 4 \end{bmatrix}$.
Determine the value of x *and of* y.

[2 markah / *2 marks*]

Jawapan / *Answer*:

$= -1$

$= -1$

$=$

$-2 =$

$= -2$

$=$ *jika pecahan, taip bentuk x/y.

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LIVEWORKSHEETS

(b) Sebuah pasar raya menjual sushi dan ayam goreng.
A supermarket sells boxes of sushi and pieces of fried chicken.

(i) Lily membelanjakan $RM55$ untuk 3 kotak sushi dan 2 ketul ayam goreng. Kelly membelanjakan lebih $RM20$ berbanding Lily untuk 4 kotak sushi dan 3 ketul ayam goreng.
Menggunakan kaedah matriks, hitung harga sekotak sushi dan seketul ayam goreng itu.
Lily spent $RM55$ on 3 boxes of sushi and 2 pieces of fried chicken. Kelly spent $RM20$ more compared to Lily on 4 boxes of sushi and 3 pieces of fried chicken.
Using matrix method, calculate the price of a box of sushi and of a piece of fried chicken.

[5 markah / *5 marks*]

Jawapan / *Answer*:

$x + \quad y =$

$x + \quad y =$

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

$$\begin{bmatrix} \\ \end{bmatrix} = \frac{1}{(\quad)(\quad)-(\quad)(\quad)}\begin{bmatrix} & \\ & \end{bmatrix}\begin{bmatrix} \\ \end{bmatrix}$$

$$\begin{bmatrix} \\ \end{bmatrix} = \frac{1}{\quad}\begin{bmatrix} (\quad)(\quad)+(\quad)(\quad) \\ (\quad)(\quad)+(\quad)(\quad) \end{bmatrix}$$

$$\begin{bmatrix} \\ \end{bmatrix} = \frac{1}{\quad}\begin{bmatrix} \\ \end{bmatrix}$$

$$\begin{bmatrix} \\ \end{bmatrix} = \begin{bmatrix} \\ \end{bmatrix}$$

Maka, $x =$, $y =$.

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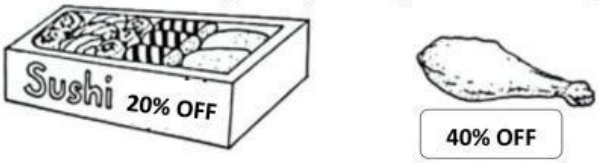
LIVEWORKSHEETS

(ii) Rajah 9 menunjukkan diskaun yang diberi oleh pasar raya itu pada satu hari tertentu.
Diagram 9 shows the discounts given by the supermarket on a particular day.



Rajah 9 / Diagram 9

Jane mempunyai RM50. Dia ingin membeli 2 kotak sushi dan 8 ketul ayam. Adakah dia mempunyai wang yang cukup untuk membeli makanan itu pada harga diskaun? Justifikasikan jawapan anda dengan menggunakan pendaraban matriks.
Jane has RM50. She wants to buy 2 boxes of sushi and 8 pieces of fried chicken. Does she have enough money to buy these items at the discounted price? Justify your answer by using matrix multiplication.

[3 markah / *3 marks*]

Jawapan / *Answer*:

$$[2 \quad 8]\begin{bmatrix} \quad \\ \quad \end{bmatrix} = [2(\quad) + 8(\quad)]$$
$$= [\quad]$$

Jane mempunyai / tidak mempunyai wang yang cukup untuk membeli makanan itu pada harga diskaun.

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LIVEWORKSHEETS

SPM SEBENAR 2024 (SOALAN 16)

(b) Pada hujung tahun, Encik Faiz menjual betik dan pisang itu. Pada bulan Mei, dia menjual 600 kg betik dan 450 kg pisang. Pada bulan Jun, dia menjual 250 kg betik dan 470 kg pisang. Rajah 11 menunjukkan pendapatan Encik Faiz daripada jualannya itu.
Later in the year, Encik Faiz sells the papayas and the bananas. In May, he sells 600 kg of papayas and 450 kg of bananas. In June, he sells 250 kg of papayas and 470 kg of bananas. Diagram 11 shows Encik Faiz's earnings from the sales.

Mei *May*	= RM3 975
Jun *June*	= RM2 645

Rajah 11 / *Diagram 11*

Menggunakan kaedah matriks, cari harga bagi sekilogram betik dan harga bagi sekilogram pisang yang dijual.
Using the matrix method, find the price of one kilogram of papayas and the price of one kilogram of bananas sold.

[5 markah / *5 marks*]

Jawapan / *Answer*:

$x + \quad y =$

$x + \quad y =$

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

$$\begin{bmatrix} \\ \end{bmatrix} = \frac{1}{(\quad)(\quad)-(\quad)(\quad)}\begin{bmatrix} & \\ & \end{bmatrix}\begin{bmatrix} \\ \end{bmatrix}$$

$$\begin{bmatrix} \\ \end{bmatrix} = \frac{1}{\quad}\begin{bmatrix} (\quad)(\quad)+(\quad)(\quad) \\ (\quad)(\quad)+(\quad)(\quad) \end{bmatrix}$$

$$\begin{bmatrix} \\ \end{bmatrix} = \frac{1}{\quad}\begin{bmatrix} \\ \end{bmatrix}$$

$$\begin{bmatrix} \\ \end{bmatrix} = \begin{bmatrix} \\ \end{bmatrix}$$

Maka, $x =$, $y =$.

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LIVEWORKSHEETS

SPM SEBENAR 2024 (SOALAN 17)

(b) Sebuah sekolah menempah 90 biji ban keju dan 30 biji ban kaya.
Sebuah tadika menempah 15 biji ban keju dan 25 biji ban kaya.
Lyn menerima bayaran sebanyak RM276 daripada sekolah dan RM89 daripada tadika itu.
Menggunakan kaedah matriks, hitung harga bagi sebiji ban keju dan harga sebiji ban kaya.
A school orders 90 pieces of cheese bun and 30 pieces of kaya bun.
A kindergarten orders 15 pieces of cheese bun and 25 pieces of kaya bun.
Lyn receives payment of RM276 from the school and RM89 from the kindergarten.
Using the matrix method, calculate the price of one piece of cheese bun and the price of one piece of kaya bun.

[5 markah / *5 marks*]

Jawapan / *Answer*:

$x + \quad y =$

$x + \quad y =$

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

$$\begin{bmatrix} \\ \end{bmatrix} = \frac{1}{(\ )(\ ) - (\ )(\ )}\begin{bmatrix} & \\ & \end{bmatrix}\begin{bmatrix} \\ \end{bmatrix}$$

$$\begin{bmatrix} \\ \end{bmatrix} = \frac{1}{\ }\begin{bmatrix} (\ )(\ ) + (\ )(\ ) \\ (\ )(\ ) + (\ )(\ ) \end{bmatrix}$$

$$\begin{bmatrix} \\ \end{bmatrix} = \frac{1}{\ }\begin{bmatrix} \\ \end{bmatrix}$$

$$\begin{bmatrix} \\ \end{bmatrix} = \begin{bmatrix} \\ \end{bmatrix}$$

Maka, $x =$, $y =$.

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LIVEWORKSHEETS

SPM SEBENAR 2025 (SOALAN 13)

(a) Diberi bahawa amtriks $P = \begin{bmatrix} 2 & 0 \\ -1 & 3 \\ 6 & -4 \end{bmatrix}$.

It is given that matrix $P = \begin{bmatrix} 2 & 0 \\ -1 & 3 \\ 6 & -4 \end{bmatrix}$.

(i) Nyatakan peringkat matriks P.
State the order of matrix P.

[1 markah / *1 mark*]

Jawapan / *Answer*:

$Peringkat = \qquad \times$

(ii) Cari nilai $P_{22} + P_{31}$.
Find the value of $P_{22} + P_{31}$.

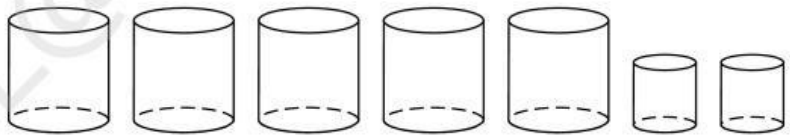
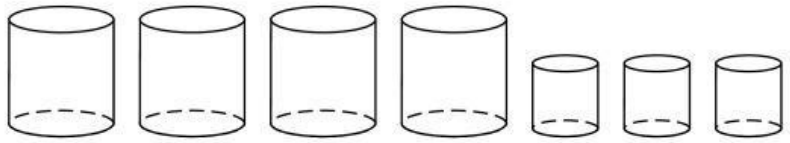
[1 markah / *1 mark*]

Jawapan / *Answer*:

$P_{22} + P_{31} = \qquad +$

$= \qquad$

(b) Tandas di sekolah mempunyai tangki besar atau tangki kecil. Rajah 8 menunjukkar bilangan tangki air di tandas lelaki dan tandas perempuan di sebuah sekolah.
Toilets in a school have either big tanks or small tanks. Diagram 8 shows the number of water tanks in male and female toilets in a school.

Tandas /*Toilet*	**Bilangan tangki air / *Number of water tank***
Lelaki *Male*	
Perempuan *Female*	

Rajah 8 / *Diagram 8*

Jumlah isi padu air di tandas lelaki adalah 5320 l. Jumlah isi padu air di tandas perempuan adalah 280 l kurang daripada tandas lelaki.
The total volume of water in a male toilet is 5320 l. *The total volume of water in female toilet is* 280 l *less than the male toilet*

(i) Menggunakan kaedah matriks, cari isi padu air, dalam l, bagi satu tangki besar dan satu tangki kecil.
Using the matrix method, find the volume of water, in l, *of a big tank and of a small tank.*

[5 markah / *5 marks*]

DAL@SMKLABUAN

LIVEWORKSHEETS

Jawapan / *Answer*:

$x + \quad y =$

$x + \quad y =$

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

$$\begin{bmatrix} \\ \end{bmatrix} = \frac{1}{(\ \ )(\ \ ) - (\ \ )(\ \ )}\begin{bmatrix} & \\ & \end{bmatrix}\begin{bmatrix} \\ \end{bmatrix}$$

$$\begin{bmatrix} \\ \end{bmatrix} = \frac{1}{\ }\begin{bmatrix} (\ \ )(\ \ ) + (\ \ )(\ \ ) \\ (\ \ )(\ \ ) + (\ \ )(\ \ ) \end{bmatrix}$$

$$\begin{bmatrix} \\ \end{bmatrix} = \frac{1}{\ }\begin{bmatrix} \\ \end{bmatrix}$$

$$\begin{bmatrix} \\ \end{bmatrix} = \begin{bmatrix} \\ \end{bmatrix}$$

Maka, $x =$, $y =$.

(ii) Pihak sekolah merancang untuk menambah 2 tangki besar dan beberapa tangki kecil untuk menyimpan 3000 l air. Menggunakan pendaraban matriks, tentukan bilangan minimum tangki kecil yang diperlukan.
The school plans to add 2 *big tanks and a few small tanks to store* 3000 l *of water. Using matrix multiplication, determine the minimum number of small tanks required.*

[2 markah / *2 marks*]

Jawapan / *Answer*:

$$[2 \quad x]\begin{bmatrix} \\ \end{bmatrix} = [3000]$$

$$[2(\quad) + x(\quad)] = [3000]$$

$$+ \qquad = 3000$$

$$x = 3000$$

$$x =$$

$$x =$$

Maka, bilangan minimum tangki kecil yang diperlukan ialah .

~TAMAT ~

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LIVEWORKSHEETS