

2. For the matrices $L = \begin{pmatrix} 7 & 0 \\ -1 & 3 \end{pmatrix}$ and $M = \begin{pmatrix} 2 \\ -5 \end{pmatrix}$, calculate the matrix product

(a) LM , $\begin{pmatrix} \square & \square \\ \square & \square \end{pmatrix}$ [2]

(b) ML , $\begin{pmatrix} \square & \square \\ \square & \square \end{pmatrix}$ [1]

2. (a) The matrix A is of order 3×2 and the matrix B is of order 2×1 . Write down the order of the resultant matrix AB . [1]

(b) $\begin{pmatrix} 5 & 0 \\ -1 & 1 \end{pmatrix} \begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} 10 \\ 5 \end{pmatrix}$. Calculate the values of x and y . [3]

Equation formed from Row1 by Column1

Equation formed from Row2 by Column1

$$x = \quad y =$$

2. Matrices A and B are defined as follows:

$$A = \begin{pmatrix} 1 & 4 \end{pmatrix} \quad B = \begin{pmatrix} 2 \\ -3 \end{pmatrix}$$

Calculate the matrix products

(a) AB , $\begin{pmatrix} \square & \square \end{pmatrix}$ [1]

(b) BA , $\begin{pmatrix} \square & \square \\ \square & \square \end{pmatrix}$ [2]

2. If $0^\circ \leq \theta \leq 360^\circ$, find the possible values of θ , correct to the nearest degree, for which $\tan 58^\circ = 1 + \cos \theta$. [4]

Transposed Equation

Numerical Value

Solved Value

2. x is directly proportional to t^2 .

Given that $t = 2$ when $x = 19.6$, find the value of

Proportional Formula

The Value of The Constant Multiplier

$$x =$$

(b) t when $x = 176.4$.

[3]

$t =$

2. A new car cost \$32,000.

By the end of each year after purchase, it loses 15% of its value at the beginning of the year.

Find the value of the car three years after purchase.

[3]

Car Value after Year One

Car Value after Year Two

Car Value after Year Three

2. The sum of the interior angles of a regular polygon is $2,340^\circ$.

Determine the size of an exterior angle.

[4]

2340° represents how many Triangles

Number of Sides of This Polygon

Size of Each Exterior Angle