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, [2]

(b) ML. [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 = y =

2. Matrices **A** and **B** are defined as follows:

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

Calculate the matrix products

(a) **AB**, [1]

(b) **BA**. [2]

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

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(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°.

Determine the size of an exterior angle. [4]

2340° represents how many Triangles

Number of Sides of This Polygon

Size of Each Exterior Angle

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