Edexcel B (R)

Matrices

2022 International GCSE Advance Information

Sparx Topics & Key Questions

We are always looking for ways to support maths teachers and students. In order to help you and your year 11s this year we've pulled together a list of key questions which may be useful to practise with your students based on the exam board topic lists.

These 5 key questions are all taken from our library of over 45,000 high-quality questions in Sparx Maths. If you are a Sparx Maths School then your students can use the Topic Codes provided to search the full content library directly within the independent learning section of Sparx Maths to help target their revision.

Please note this is not an exhaustive topic guide it is simply designed to help you pull together some key questions to use to check for understanding in lessons, starters, or as worksheets with your learners.

Matrices	Topics	Sparx Topic Codes
Manipulation	Addition and multiplication	B133, B947
	Determinant of a matrix	B879
	Inverse of a 2×2 matrix	B879

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Manipulation - Addition and multiplication

Addition and scalar multiplication of matrices B133

$$\mathbf{A} = \begin{pmatrix} 6 & 2 \\ 0 & 1 \end{pmatrix} \quad \mathbf{B} = \begin{pmatrix} 0 & 12 \\ 7 & 1 \end{pmatrix}$$

Calculate $\mathbf{B} - 4\mathbf{A}$

Multiplying matrices B947

$\mathbf{W}$ is a 2×2 matrix.
$\mathbf{X}$ is a 2×3 matrix.
$\mathbf{Y}$ is a 3×2 matrix.
$\mathbf{Z}$ is a 3×3 matrix.

For each multiplication below, give the order of the resultant matrix or state that the multiplication is not possible.

a) $\mathbf{WX}$

b) $\mathbf{XW}$

c) $\mathbf{YZ}$

d) $\mathbf{ZY}$

$$\mathbf{T} = \begin{pmatrix} 0 & -1 \\ 4 & 2 \\ -3 & -4 \end{pmatrix} \qquad \mathbf{U} = \begin{pmatrix} 3 \\ -2 \end{pmatrix}$$

Manipulation - Determinant of a matrix

Determinants and inverses of matrices **B879**

$$\mathbf{C} = \begin{pmatrix} 8 & w \\ 10 & 9 \end{pmatrix} \text{ and } |\mathbf{C}| = 2$$

Work out the value of w.

Calculate $\mathbf{A}^{-1}$ where $\mathbf{A} = \begin{pmatrix} \frac{5}{2} & \frac{13}{4} \\ \frac{1}{2} & \frac{3}{4} \end{pmatrix}$

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Manipulation - Inverse of a 2×2 matrix

Determinants and inverses of matrices **B879**

$$\mathbf{C} = \begin{pmatrix} 8 & w \\ 10 & 9 \end{pmatrix} \text{ and } |\mathbf{C}| = 2$$

Work out the value of w.

Calculate $\mathbf{A}^{-1}$ where $\mathbf{A} = \begin{pmatrix} \frac{5}{2} & \frac{13}{4} \\ \frac{1}{2} & \frac{3}{4} \end{pmatrix}$

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