7 Transformations and vectors

7.1 Transformations	Notes and examples
Recognise, describe and draw the following transformations: 1 Reflection of a shape in a straight line. 2 Rotation of a shape about a centre through multiples of 90°.	Questions may involve combinations of transformations. A ruler must be used for all straight edges.
3 Enlargement of a shape from a centre by a scale factor. 4 Translation of a shape by a vector $\begin{pmatrix} x \\ y \end{pmatrix}$.	Positive, fractional and negative scale factors may be used.

7.2 Vectors in two dimensions	Notes and examples
1 Describe a translation using a vector represented by $\begin{pmatrix} x \\ y \end{pmatrix}$, $\overrightarrow{AB}$ or $\mathbf{a}$. 2 Add and subtract vectors. 3 Multiply a vector by a scalar.	Vectors will be printed as $\overrightarrow{AB}$ or $\mathbf{a}$.

7.3 Magnitude of a vector	Notes and examples
Calculate the magnitude of a vector $\begin{pmatrix} x \\ y \end{pmatrix}$ as $\sqrt{x^2 + y^2}$	The magnitudes of vectors will be denoted by modulus signs, e.g. • $\lvert\mathbf{a}\rvert$ is the magnitude of $\mathbf{a}$ • $\lvert\overrightarrow{AB}\rvert$ is the magnitude of $\overrightarrow{AB}$.

7.4 Vector geometry	
1 Represent vectors by directed line segments. 2 Use position vectors. 3 Use the sum and difference of two or more vectors to express given vectors in terms of two coplanar vectors.	
4 Use vectors to reason and to solve geometric problems.	Examples include: • show that vectors are parallel • show that 3 points are collinear • solve vector problems involving ratio and similarity.