Guide to: Translations

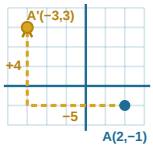
maths Links

Explanation:

A **translation** slides a shape without rotating, reflecting, or resizing it. Translations are written using a **column vector** $\begin{pmatrix} x \\ y \end{pmatrix}$, where the top number ***x*** is the horizontal movement (**+ right, − left**) and the bottom number ***y*** is the vertical movement (**+ up, − down**).

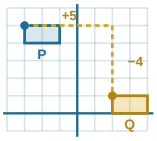
When finding the translation vector from shape *A* to shape *B*, always pick **one matching corner** on both shapes (e.g. the top-right corner to the top-right corner) rather than counting the gap between the two shapes.

Example 1: Point *A*(**2, −1**) is translated by $\begin{pmatrix} -5 \\ 4 \end{pmatrix}$. Find *A′*.



Move **5 left**, **4 up**:
$x = 2 - 5 = \mathbf{-3}$
$y = -1 + 4 = \mathbf{3} \rightarrow \mathbf{(-3, 3)}$

Example 2: Top-left vertex of *P* is **(−3, 5)** and top-left of *Q* is **(2, 1)**. Describe the transformation from *P* to *Q*.



−3 to 2: **+5** (right)
5 to 1: **−4** (down)
Translation $\begin{pmatrix} \mathbf{5} \\ \mathbf{-4} \end{pmatrix}$

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Corbettmaths (Practice)	Qs	Ans	**PMT (Edexcel)**	Qs	Ans
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