# EdExcel AS Mathematics Vectors
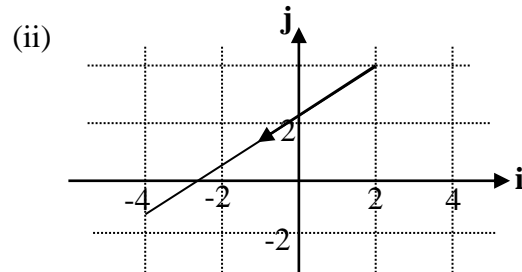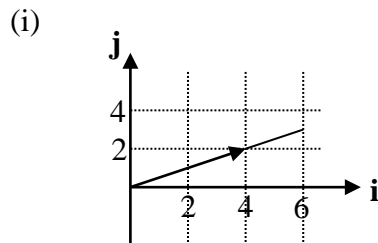
## Section 1: Introduction to vectors

### Exercise level 1

1.  Write the following vectors in component form.

    (i)

    

    (ii)

    

2.  Find the magnitude of each of these vectors.
    (i)   $3\mathbf{i} + 4\mathbf{j}$
    (ii)  $3\mathbf{i} - 6\mathbf{j}$
    (iii)  -$\mathbf{i} - \mathbf{j}$

3.  The points A, B and C have coordinates (4, -1), (3, 7) and (-2, 3) respectively.
    Find
    (i)   $\overrightarrow{AB}$
    (ii)  $\overrightarrow{BA}$
    (iii) $\overrightarrow{AC}$
    (iv)  $\overrightarrow{CB}$

4.  The vectors **a**, **b** and **c** are given by $\mathbf{a} = \begin{pmatrix} 3 \\ -4 \end{pmatrix}$, $\mathbf{b} = \begin{pmatrix} 2 \\ 5 \end{pmatrix}$ and $\mathbf{c} = \begin{pmatrix} -1 \\ -3 \end{pmatrix}$

    Find the vectors
    (i)   $\mathbf{b} + 2\mathbf{a}$
    (ii)  $2\mathbf{c} - \mathbf{b}$
    (iii) $\mathbf{a} - \mathbf{b} + 3\mathbf{c}$