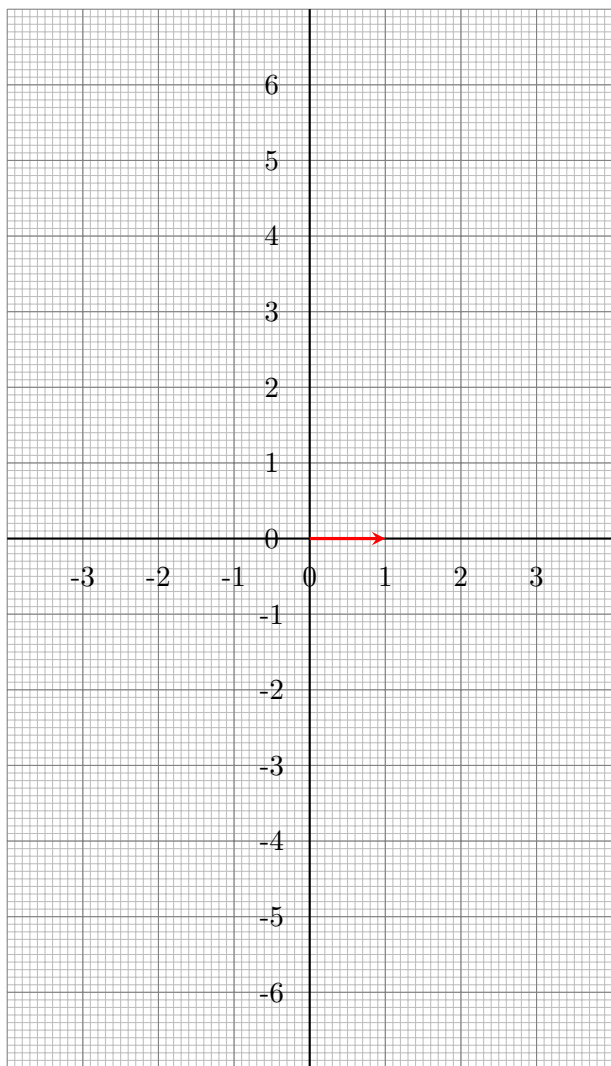
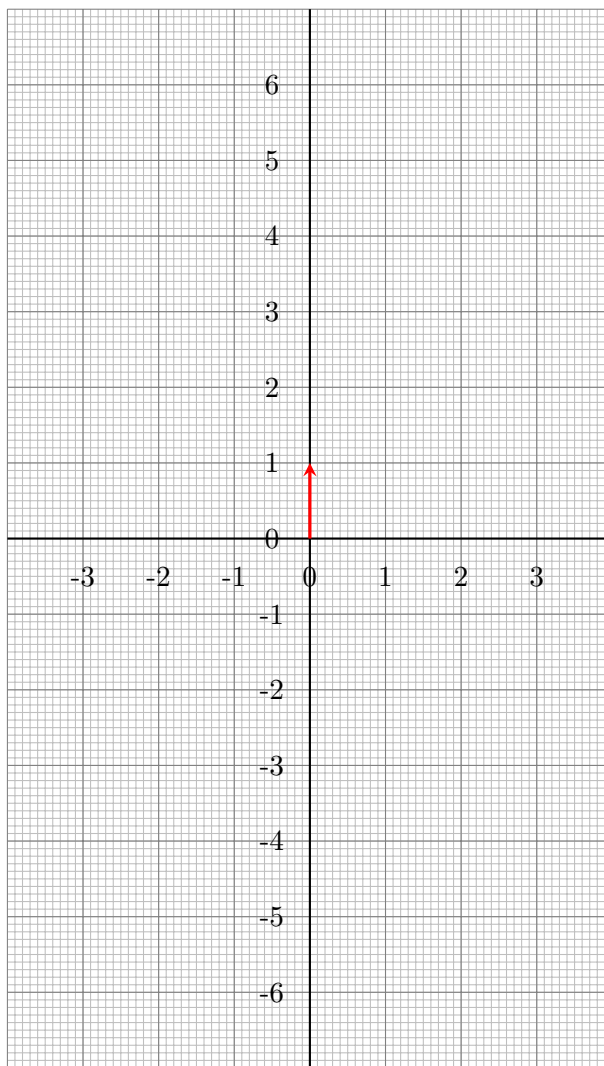


Write in the form $a\mathbf{i} + b\mathbf{j}$:

a)

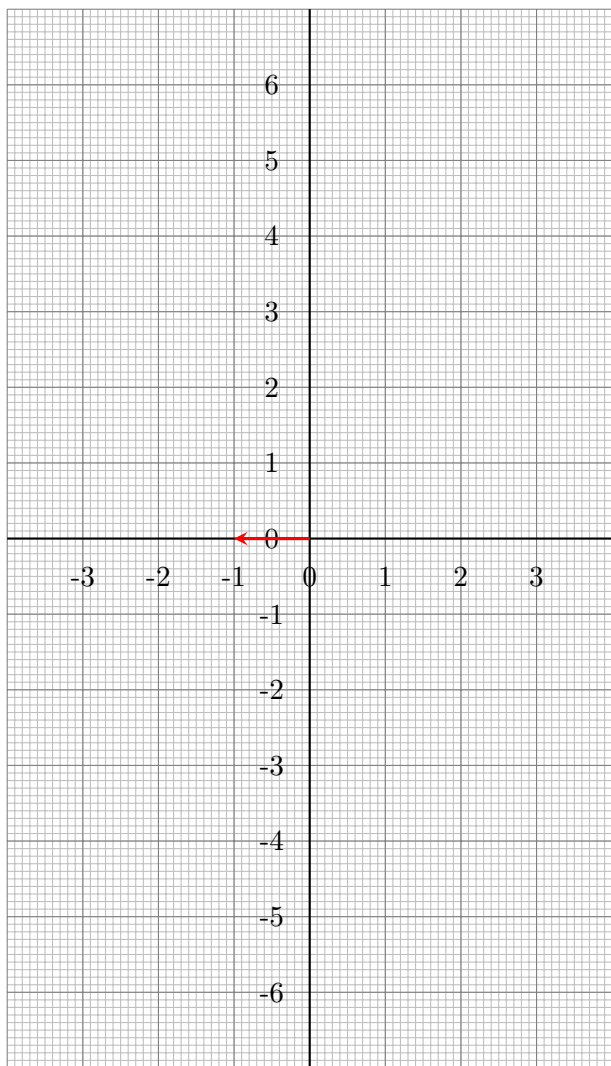


b)

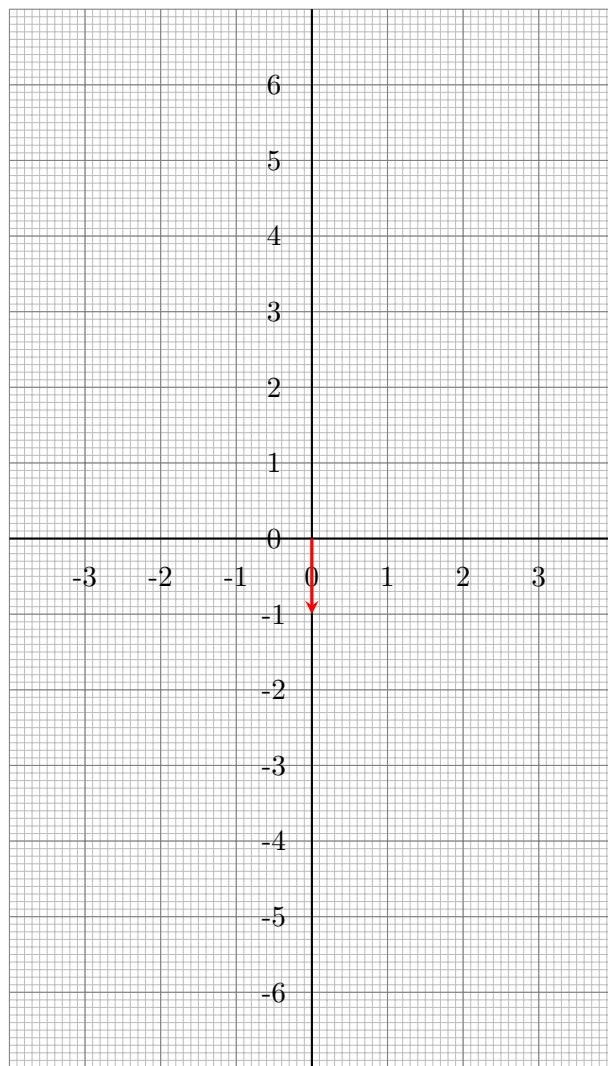


Write in the form $a\mathbf{i} + b\mathbf{j}$:

a)

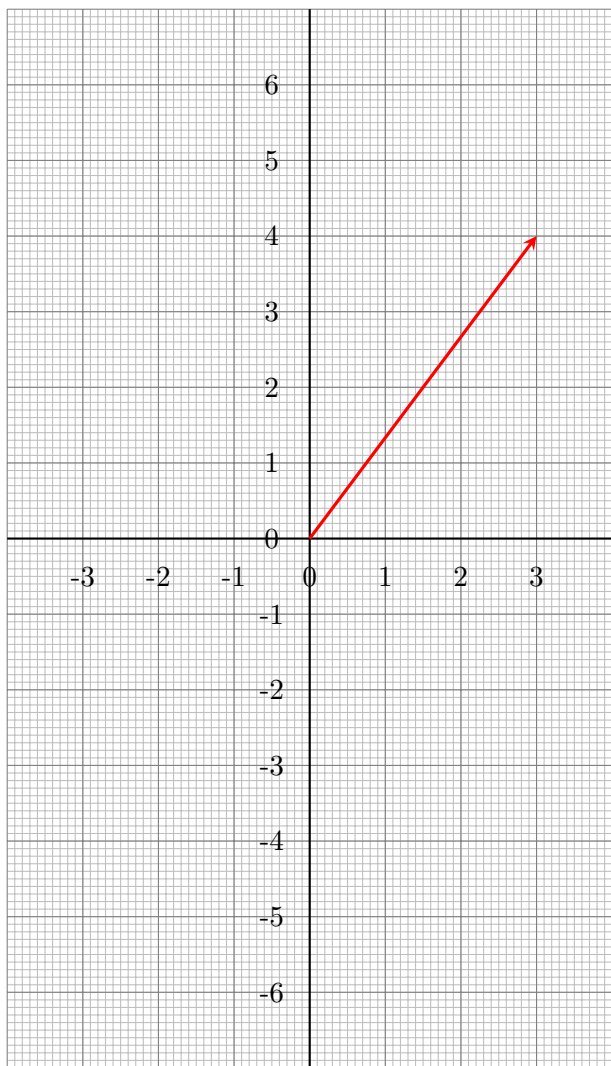


b)

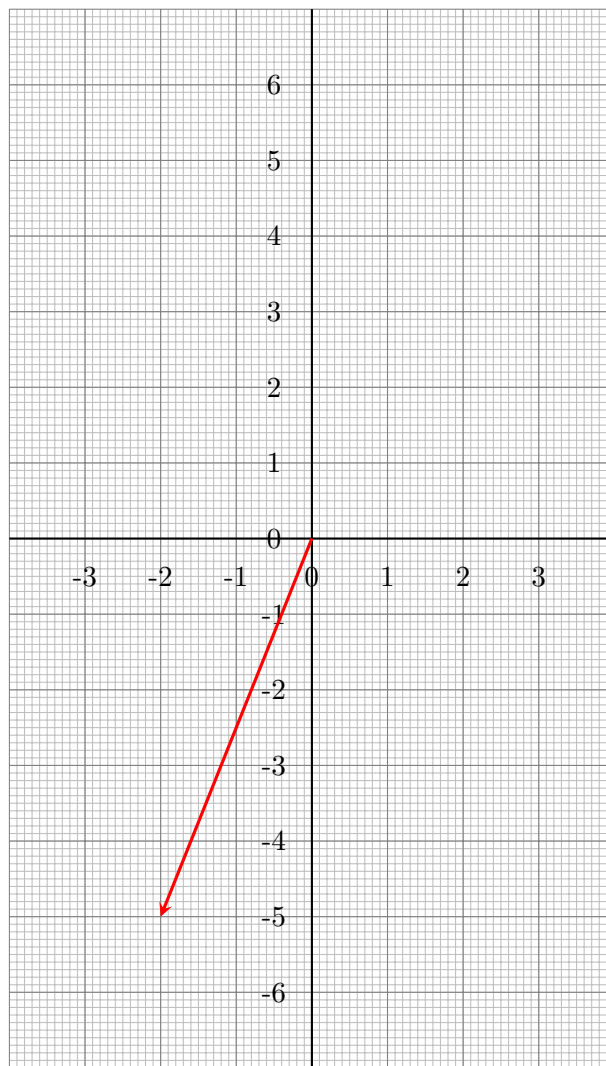


Write in the form $a\mathbf{i} + b\mathbf{j}$:

a)

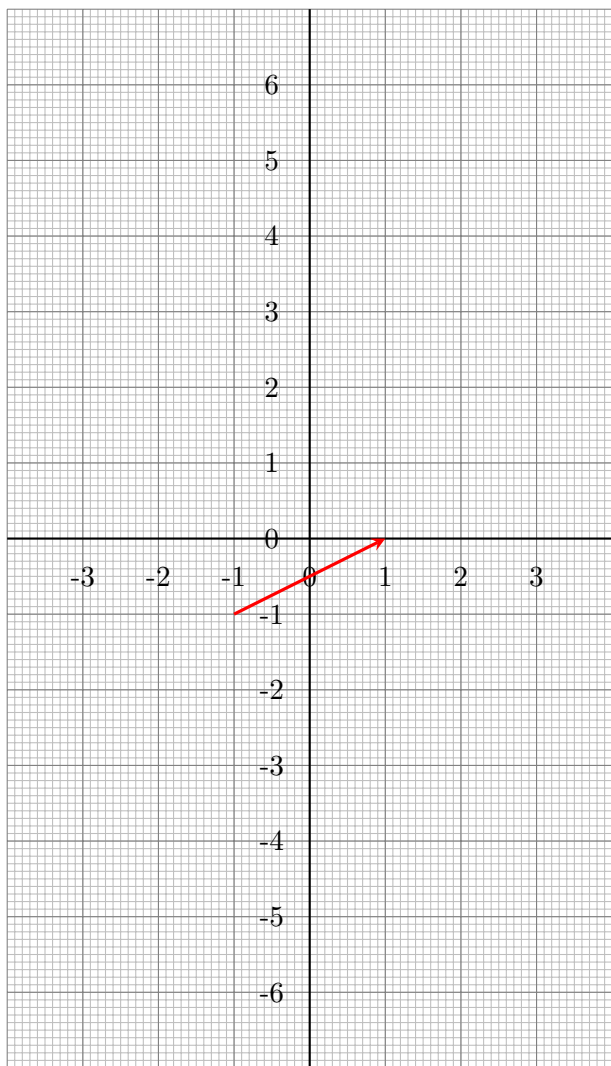


b)

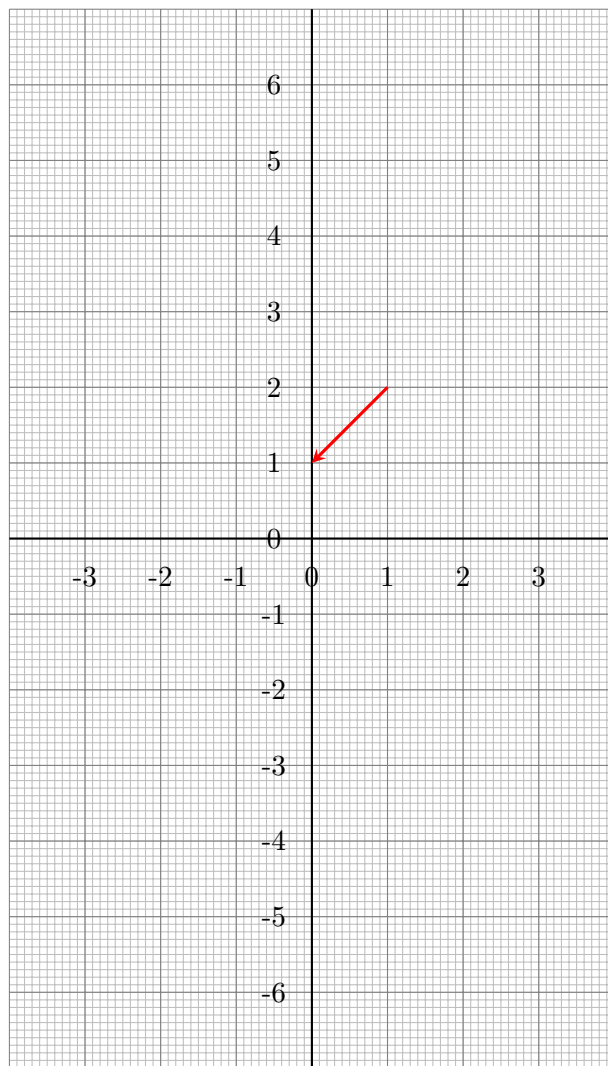


Write in the form $a\mathbf{i} + b\mathbf{j}$:

a)



b)



Write as column vectors:

a) $3\mathbf{i} + 4\mathbf{j}$

b) $3\mathbf{i}$

c) $-4\mathbf{j}$

d) $-3\mathbf{i} + \mathbf{j}$

e) $3.1234\mathbf{i}$

f) $-\mathbf{j}$

Work out the matrix calculations

a) $\begin{pmatrix} 4 \\ -2 \end{pmatrix} + \begin{pmatrix} -3 \\ -1 \end{pmatrix}$

b) $\begin{pmatrix} 14 \\ -2 \end{pmatrix} - \begin{pmatrix} 23 \\ 1 \end{pmatrix}$

c) $4 \begin{pmatrix} 4 \\ -2 \end{pmatrix} + 2 \begin{pmatrix} -3 \\ -1 \end{pmatrix}$

d) $-2 \begin{pmatrix} 14 \\ -2 \end{pmatrix} - \begin{pmatrix} 23 \\ 1 \end{pmatrix}$

e) $\begin{pmatrix} 1 & 2 \\ 3 & 4 \end{pmatrix} + \begin{pmatrix} 5 & 6 \\ 7 & 8 \end{pmatrix}$

f) $\begin{pmatrix} 1 & -2 \\ 3 & -4 \end{pmatrix} + \begin{pmatrix} -5 & 6 \\ -7 & 8 \end{pmatrix}$

Work out the matrix calculations

$$\text{a) } -2 \begin{pmatrix} 1 & 2 \\ 3 & 4 \end{pmatrix} + 3 \begin{pmatrix} 5 & 6 \\ 7 & 8 \end{pmatrix}$$

$$\text{b) } - \begin{pmatrix} 1 & -2 \\ 3 & -4 \end{pmatrix} - \begin{pmatrix} -5 & 6 \\ -7 & 8 \end{pmatrix}$$

$$\text{c) } -2 \begin{pmatrix} 1 & 2a \\ 3b & 4 \end{pmatrix} + 3 \begin{pmatrix} 5 & 6c \\ 7 & 8 \end{pmatrix}$$

$$\text{d) } -x \begin{pmatrix} 1 & -2 \\ 3 & -4 \end{pmatrix} - \begin{pmatrix} -5 & 6 \\ -7 & 8 \end{pmatrix}$$

$$\text{e) } \begin{pmatrix} 1 & 2 \\ 3 & 4 \end{pmatrix} \begin{pmatrix} 5 \\ 7 \end{pmatrix}$$

$$\text{f) } \begin{pmatrix} 1 & -2 \\ 3 & -4 \end{pmatrix} \begin{pmatrix} -2 \\ 0 \end{pmatrix}$$

Work out the matrix calculations

a) $\begin{pmatrix} 1 & 2 \\ 3 & 4 \end{pmatrix} \begin{pmatrix} x \\ y \end{pmatrix}$

b) $\begin{pmatrix} 1 & -2 \\ 3 & -4 \end{pmatrix} \begin{pmatrix} -2x+2 \\ z \end{pmatrix}$

c) $\begin{pmatrix} 1 & 2 \end{pmatrix} \begin{pmatrix} 3 \\ 4 \end{pmatrix}$

d) $\begin{pmatrix} 1 & -2 \end{pmatrix} \begin{pmatrix} -2x \\ z \end{pmatrix}$

e) $\begin{pmatrix} 1 & 2 \end{pmatrix} \begin{pmatrix} x & 4 \\ y & 7 \end{pmatrix}$

f) $\begin{pmatrix} 1 & -2 \end{pmatrix} \begin{pmatrix} -2 & 2 \\ -15 & 3 \end{pmatrix}$

Work out the matrix calculations

a) $\begin{pmatrix} 1 & 2 \\ 3 & 4 \end{pmatrix} \begin{pmatrix} 5 & 6 \\ 7 & 8 \end{pmatrix}$

b) $\begin{pmatrix} 1 & -2 \\ 3 & -4 \end{pmatrix} \begin{pmatrix} -5 & 6 \\ -7 & 8 \end{pmatrix}$