1.

$$\mathbf{a} = \begin{pmatrix} 3 \\ 5 \end{pmatrix} \qquad\qquad \mathbf{b} = \begin{pmatrix} 4 \\ 1 \end{pmatrix}$$

Complete these column vectors

(i) $2\mathbf{a} = \begin{pmatrix} ..... \\ ..... \end{pmatrix}$ (ii) $3\mathbf{b} = \begin{pmatrix} ..... \\ ..... \end{pmatrix}$

$$\mathbf{a} = \begin{pmatrix} 3 \\ 5 \end{pmatrix} \qquad\qquad \mathbf{b} = \begin{pmatrix} 4 \\ 1 \end{pmatrix}$$

2.

$$\mathbf{c} = \begin{pmatrix} 2 \\ 1 \end{pmatrix} \qquad\qquad \mathbf{d} = \begin{pmatrix} 1 \\ -3 \end{pmatrix}$$

Complete these column vectors

(i) $3\mathbf{c} = \begin{pmatrix} ..... \\ ..... \end{pmatrix}$
(ii) $4\mathbf{d} = \begin{pmatrix} ..... \\ ..... \end{pmatrix}$

3.

$$\mathbf{p} = \begin{pmatrix} 5 \\ 2 \end{pmatrix} \qquad\qquad \mathbf{q} = \begin{pmatrix} -3 \\ 4 \end{pmatrix}$$

Complete these column vectors

(i) $3\mathbf{p} = \begin{pmatrix} ..... \\ ..... \end{pmatrix}$
                                          (ii) $4\mathbf{q} = \begin{pmatrix} ..... \\ ..... \end{pmatrix}$

Answers

1. (i) 6 (ii) 12
   10   3

2. (i) 6 (ii) 4
    3   -12

3. (i) 15 (ii) -12
    6   16