



Subject: Supplementary English 5 (Mathematics)

Class: Secondary 5/7

Topic: Vectors

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Worksheet 4: Scalar Multiplication of Vectors

I. If $\mathbf{a} = \begin{bmatrix} 5 \\ -12 \end{bmatrix}$, calculate:

1. $4\mathbf{a}$

3. $-\mathbf{a}$

5. $-2\mathbf{a}$

2. $\frac{1}{2}\mathbf{a}$

4. $|\mathbf{a}|$

6. $|3\mathbf{a}|$

II. State which of the following pairs of vectors are parallel:

1. $\begin{bmatrix} 3 \\ 6 \end{bmatrix}$ and $\begin{bmatrix} 1 \\ 3 \end{bmatrix}$

3. $5\mathbf{i} + 10\mathbf{j}$ and $\frac{1}{4}\mathbf{i} + \frac{1}{2}\mathbf{j}$

2. $\begin{bmatrix} -2 \\ 8 \end{bmatrix}$ and $\begin{bmatrix} 1 \\ -4 \end{bmatrix}$

4. $4\mathbf{i} - 7\mathbf{j}$ and $2\mathbf{i} - 3\mathbf{j}$