Vector Triple product

$A \times (B \times C) = (A \cdot C)B - (A \cdot B)C$

$(A \times B) \times C = (A \cdot C)B - (B \cdot C)A$

$A \times (B \times C) \neq (A \times B) \times C$

$(A \times B) \cdot (C \times D) = (A \cdot C)(B \times D) - (A \cdot D)(B \cdot C)$

$(A \times B) \times (C \times D) = (A \cdot B \times D)C - (A \cdot B \times C)D$

Linear combination

A and $B \in V$, m and n are two scalar

$mA + nB$ is called linear combination

Collinear vectors

Two vector $\vec{A}$ and $\vec{B}$ are said to be collinear if they are parallel to the same straight line

Coplanar vector

Three vector A, B and C are said to be coplanar if they are parallel to the same plane.

* $|A \cdot B| = |A||B|$ only when $\vec{A}$ and $\vec{B}$ are parallel (i.e collinear)
* $(A \times B)^2 = |A|^2|B|^2 - (A \cdot B)^2$ This is known as Lagrange's identity
* $A \times B + B \times C + C \times A = 0$ are collinear