

Head-to-Tail Method of Vector Addition

Lesson Notes

What is Vector Addition?

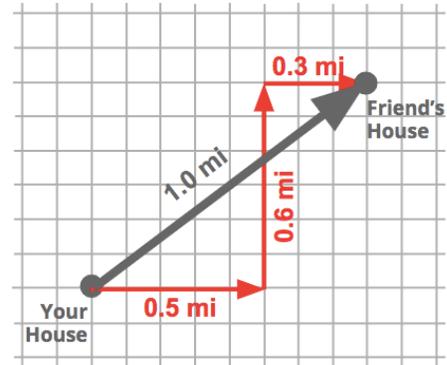
The process of combining two or more vectors to determine the cumulative effect.

An Example of Vector Addition

Imagine walking to your friend's house along the path shown:

- 0.5 mi, East
- 0.6 mi, North
- 0.3 mi, East

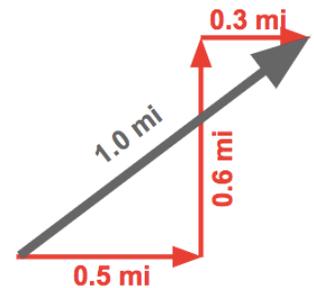
The **net result** of these three individual displacements is an overall displacement of 1.0 mi, 37° N of E.



Head-to-Tail Method

When adding vectors, place the tail of the second vector at the head of the first vector. The tail of the third vector is placed at the head of the second vector. The **resultant** vector is drawn from the tail of the first vector to the head of the last vector.

Like elephants in the circus, vectors join in a **head-to-tail** fashion when added as vectors.



Resultant

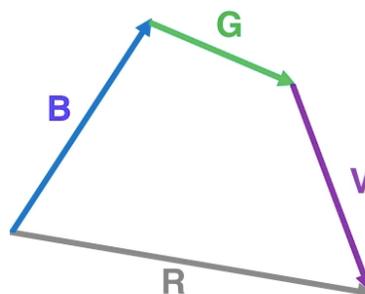
The **Resultant** is the result of adding two or more vectors. It is the **sum** of the vectors.

Example 1

What is $B + G + V$?



Example 1 Solution

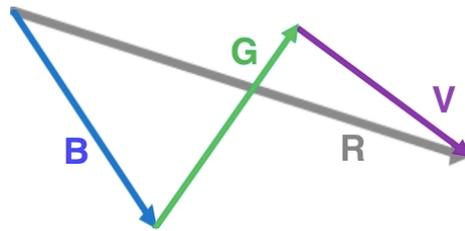


Example 2

What is $B + G + V$?



Example 2 Solution



Does the Addition Order Matter?

The order in which vectors B , G , and V are added does not affect the magnitude and direction of R .

