

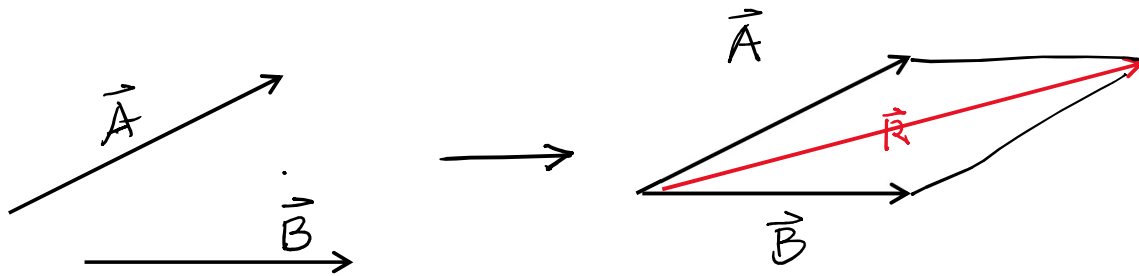
Scalar Quantity: Physical quantities that have only magnitude.

e.g., Mass, density, speed, etc.

Vector Quantity: Physical quantities that need both magnitude and direction for complete description.

e.g., Velocity, force, acceleration, etc.

Vector addition: Parallelogram method

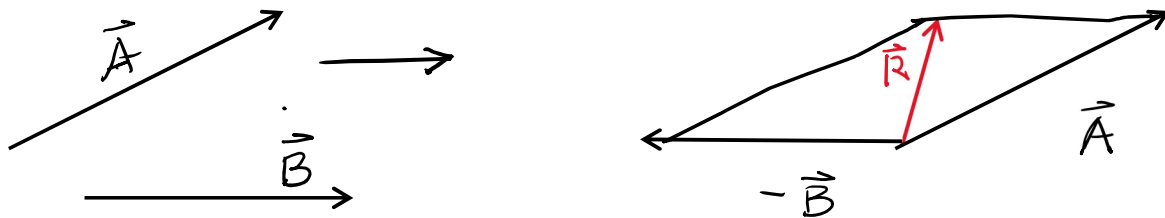


Step 1: Move vectors A and B so their tails are at the same point.

Step 2: Complete the parallelogram.

Step 3: The diagonal of the parallelogram from tails of the vectors is the resultant vector.

Vector subtraction: Parallelogram method

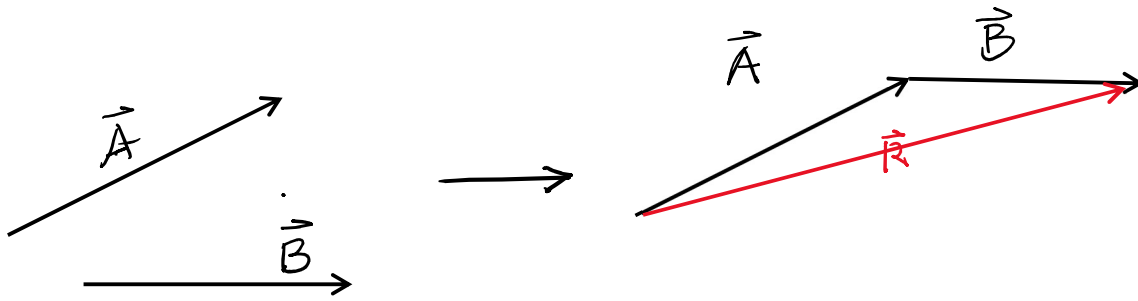


Step 1: Move vectors A and $-\vec{B}$ so their tails are at the same point.

Step 2: Complete the parallelogram.

Step 3: The diagonal of the parallelogram from tails of the vectors is the resultant vector.

Vector addition: Triangle method



Step 1: Move the tail of vector B to the head of vector A.

Step 2: Complete the triangle.

Step 3: The resultant from the tail of vector A to the head of vector B is the resultant vector.

Note: Vector addition is commutative. If you arrange tail of vector A to the head of vector B and then complete the triangle, you will get the same resultant vector. Give it a try!

Vector subtraction: Triangle method



Step 1: Move the tail of vector A to the head of $-B$ (negative B vector).

Step 2: Complete the triangle.

Step 3: The diagonal of the parallelogram from tails of the vectors is the resultant vector.