

# Scalar and vectors essay



**ASSIGN  
BUSTER**

Mathematicians and scientists call a measure which depends on way a vector measure. and a measure which does not depend on way is called a scalar measure. Vector measures have two features. a magnitude and a way. Scalar measures have merely a magnitude. When comparing two vector measures of the same type. you have to compare both the magnitude and the way. For scalars. you merely have to compare the magnitude.

When making any mathematical operation on a vector measure ( like adding. deducting. multiplying... ) you have to see both the magnitude and the way. This makes working with vector measures a little more complicated than scalars. On the slide we list some of the physical measures discussed in the Beginner's Guide to Propulsion and group them into either vector or scalar measures. Of particular involvement. the forces. which operate on a winging aircraft. the weight. push. and aerodynamic forces. are all vector measures.

The ensuing gesture of the aircraft in footings of supplanting. speed. and acceleration are besides vector measures. These measures can be determined by application of Newton's Torahs for vectors. The scalar measures include most of the thermodynamic province variables involved with the propulsion system. such as the denseness. force per unit area. and temperature of the propellents. The energy. work. and entropy associated with the engines are besides scalar measures.

There are some measures. like velocity. which have really particular definitions for scientists. By definition. velocity is the scalar magnitude of a speed vector. A auto traveling down the route has a velocity of 50 miles per hour. Its speed is 50 miles per hour in the northeast way. It can acquire

really confounding when the footings are used interchangeably! While Newton's Torahs describe the ensuing gesture of a solid. there are particular equations which describe the gesture of fluids. gases and liquids. through the propulsion system.

For any physical system. the mass. impulse. and energy of the system must be conserved. Mass and energy are scalar measures. while impulse is a vector measure. This consequences in a conjugate set of equations. called the Navier-Stokes equations. which describe how fluids behave when subjected to external forces. These equations are the unstable equivalent of Newton's Torahs of gesture and are really hard to work out and understand. A simplified version of the equations called the Euler equations can be solved for some fluids jobs.