UNIVERSIDAD TECNOLÓGICA DE SAN LUIS RIO COLORADO

HW 3-4

MTRO. DELGADO GONZALEZ ARNOLDO

AUTOR: VICTOR MANUEL GALVAN COVARRUBIAS

San Luis Rio Colorado, Sonora Agosto, 2020

3.2 Vectors
HW #3 Scalars and Vectors

Temperature. Depending on the scale used, each numerical value will represent an absolute magnitude of heat, so 20°C constitudes a fixed value within the scale, regardless of the conditions accompanying the measurement. °C °K °F

Pressure. Ambient pressure usually measured in millimeters of mercury (mmHg), is the weight that the mass of air in the atmosphere exerts on things and is measurable on a linear scale.

Length. One of the two fundamental dimensions, the length of things or distances, is perfectly measurable through the linear scale of the metric system. cm m Km

Energy. Defined as the ability of mater to act physically or chemically, it is usually measured in joules, although depending on the specific type of energy it can vary to other units.

Mass. The amount of matter that an object contains is measured as a fixed valve throug the metric system. gram Kilogram

Time. Relativities apart, time is measurable through the same linear system of seconds, minutes and hours. regardless of the conditions in which the measurement occurs.

Area. Usually represented by a number of square meters, it is the limited area of an enclosure or an object, as opposed to what is around it. m^2

Volume. Ratio of the three-dimensional space occupied by a specific body, measurable in cubic centimeters. cm^3

Frequency. It is a quantity that allows to measure the number of repetitions of a phenomenon of periodic event per unit of time elapsed. Its scalar unit is the hertz, which respond to the formulation $1\ Hz = 1/s$, that is, one repetition per second.

Density. Density is the relationship between the mass of an object and the volume it occupies, so it is a dependent value of both magnitudes, and representable through its own scale: Kilograms per cubic meter.

Force. A force is understood as everything capable of modifying the position, shape of momentum of an object or a particle, expressed in newtons.
Speed. It expresses the amount of distance traveled by an object in a given unit of time, noted as meters per second.
Electric tension. Also known as voltage, electrical voltage is the difference in electrical potencial between two points or two particles.
Position. This magnitud refers to the location of a particle or object in space-time.
Inertia. The friction force, opposed to all movement and always tending towards stillness, is expressed vectorially, because it opposses the forces of movement, always tending to the same direction but opposite orientation.

HW #4 Adding vectors

Add the vectors $\vec{a} = (8, 13)$ and $\vec{b} = (-10, 10)$

$\vec{c} = (8 + (-10)), (13 + 10)$
$\vec{c} = -2, 23$
$\vec{c} = (-2, 23)$

Add the vectors $\vec{c} = (33, -40)$ and $\vec{d} = (5, 5)$

$\vec{e} = (33 + 5), (-40 + 5)$
$\vec{e} = 38, -35$
$\vec{e} = (38, -35)$

Add the vectors $\vec{e} = (-70, -12)$ and $\vec{f} (-3, -7)$

$\vec{g} = (-70 + (-3)), (-12 + (-7))$
$\vec{g} = -73, -19$
$\vec{g} = (-73, -19)$

Add the vectors $\vec{a} = (13, 8)$ and $b = (26, 7)$

$\vec{c} = (13 + 26), (8 + 7)$
$\vec{c} = 39, 15$
$\vec{c} = (39, 15)$