Gr12_P6_LT1 Cheat Sheet

by cheatography_brrniz (PleaseSimplifyThings) via cheatography.com/192944/cs/40

Physics

experimental science	
study of the physical world *(interactions between energy and matter)*	

Models, Theories, and Laws

Model	analogy
	representation of a phenomena in terms of something else we are familiar with
Theory	more detailed
	gives quantitatively testable predictions
Law	concise, general statement of nature behavior

Classical Physics

Acoustics	sound & sound propagation
Electromagnetism	electricity
Mechanics	object's state of motion
Optics	light and color
Thermodynamics	heat

Modern Physics

Nuclear/Atomic	nuclear power plants
Quantum	matter & energy at fundamental lvl
Relativity	focused on Einstein's study
Condensed Matter	substances in their solid state
Plasma	superheated matter
Low Temperature	

Filipino Physicists

Christopher & Ma. Victoria Bernido	teaching physics, innovative way
Caesar Saloma, PhD	optics contributions
Fr. Jose Ramon Villarin, SJ	atmospheric science contributions
Reinabelle Reyes, PhD	astrophysicist, data scientist
	confirmed Einstein's Theory of Relativity
Reginald Christian Bernardo, PhD	first homegrown gravitational scientist
Jacquiline Romero PhD	experimental quantum information expert

Measurement

End all measurements with first uncertain digit

Plastic Ruler	piece of plastic
	uncertainty: ±0.5
Vernier Caliper	more accurate than ruler
	used on rings
	always 3 decimal places
	can measure depth of hole
	uncertainty ±0.025
Micrometer	more accurate than ruler and caliper
	one revolution: ±0.500
	uncertainty: ±0.005

Significant Figures Rules

all nonzero digits are significant	5, 121, 859	6 SigFigs
zeros between nonzero digits are significant	5, 101, 009	6 SF
zeros before first nonzero digit are not sig	0.0051	2 SF

Significant Figures Rules (cont)

trailing zeros after decimal point are sig	5.0000	5 SF
trailing zeros without decimal point are not sig	500	1 SF

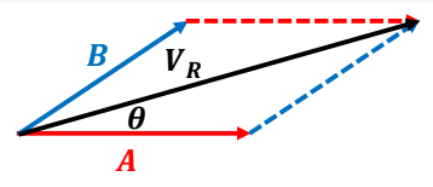
Vectors and Scalars

Scalar Quantities	magnitude only, no direction
	distance, speed, time
Vector Quantities	magnitude + direction
	displacement, velocity, acceleration

Vector Additions

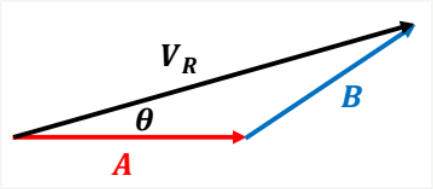
Graphical Method	parallelogram
	head-to-tail
Mathematical Method	law of sines and consines
	supported by graphical method

Parallelogram Method



initial points coincide, Vr represents resultant vector

Head to Tail Method



uses the Pythagorean theorem

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Page 1 of 1.

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