Mathematics in Modern World

(1RDT-A) | BATCH 2025

COLLEGE OF RADIOLOGY – FEU-NICANOR REYES MEDICAL FOUNDATION

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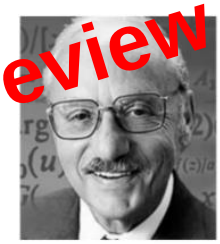
REFERENCES: PPT, Handouts, Internet, textbook

NATURE OF MATHEMATICAL SYSTEMS

Topic Outline	
1	Linear Programming
2	Systems of Linear Inequalities
3	Modeling with Linear Programming
4	Graphical Method
5	Simplex Method

Linear Programming

A modeling procedure that is used to maximize profits, minimize costs, control inventories, efficiently assign tasks to personnel, etc.



George Dantzig (1914-2005)
American Mathematician

Linear Equation	↦ An equation that has the form $ax + by + c = 0$.
Linear Inequality	↦ Resembles a linear equation but with the equality symbol replaced by an inequality symbol ↪ $<$ [*less than*] ↪ $>$ [*greater than*] ↪ $\leq$ [*less than or equal to*] ↪ $\geq$ [*greater than or equal to*]
	↦ To graph a linear inequality in two variables (say, x and y), ↦ first get y alone on one side. Isipin niyo muna na = sign yung $<$, $\leq$, $>$, or $\geq$ sign ↪ If the inequality is strict ($<$ or $>$), graph a dashed line. ↪ If the inequality is not strict ($\leq$ and $\geq$), graph a solid line.
Difference of an equation to an inequality	$y = 4x + 2$ (kapag sinabing equation ang makukuha mong final answer is equal sa given.) $y \leq 4x + 2$ (kapag sinabi naman na inequality ang makukuha mo namang final answer is pwedeng less than, greater than, less than or equal to or greater than or equal to sa given.)