KNEWTON | alta

Finite Mathematics with Corequisite Support

To learn more about all our offerings
Visit **Knewton.com**

openstax | AN OPENSTAX ALLY

Source	Author(s) (Text or Video)	Title(s)	Link (where applicable)
OpenStax	Senior Contributing Authors: Gilbert Strang - Massachusetts Institute of Technology Edwin Herman - University of Wisconsin-Stevens Point	College Algebra, Prealgebra, and Statistics	OpenStax
Mathispower4u	James Sousa	MathIsPower4U	Mathispower4U Videos
Open Textbook Library		Math in Society	Math in Society

Finite Mathematics with Corequisite Support | Table of Contents

- Multiplication
    - Translate word phrases involving multiplication to math notation

Chapter 2: Fractions and Decimals

2.1 Introduction to Fractions

- Addition and Subtraction of Fractions
    - Add or subtract fractions with different denominators
    - Add or subtract fractions with a common denominator
- Mixed Numbers
    - Order fractions and mixed numbers
    - Model improper fractions and mixed numbers
    - Locate fractions and mixed numbers on the number line (*37)
    - Convert between improper fractions and mixed numbers
- Equivalent Fractions
    - Simplify a fraction
    - Model equivalent fractions
    - Identify when fractions are equivalent
    - Find equivalent fractions
- Understanding Fractions
    - Understand the meaning of fractions
    - Locate fractions on a number line and write inequality statements involving fractions

2.2 Operations with Fractions

- Multiplication and Division of Fractions
    - Use the order of operations to simplify complex fractions and expressions with multiple operations
    - Translate an English phrase to an expression with fractions
    - Simplify expressions written with a fraction bar
    - Simplify complex fractions
    - Multiply fractions
    - Find reciprocals
    - Evaluate variable expressions with fractions
    - Divide two fractions
    - Divide fractions

2.3 Decimals

- Addition and Subtraction of Decimals
    - Perform operations with decimals
    - Locate decimals on a number line and write inequality statements involving decimals
    - Add and subtract decimals

- Decimals and Fractions
    - Simplify expressions with fractions and decimals
    - Convert between fractions and decimals
- Multiplication and Division of Decimals
    - Multiply decimals
    - Divide decimals

Chapter 3: Expressions and Equations

3.1 Building Expressions

- Introduction to Expressions
    - Identify expressions and equations
- Writing Expressions
    - Write word phrases from applications as algebraic expressions
    - Translate word phrases to expressions with integers
    - Translate word phrases to algebraic expressions

3.2 Evaluating Expressions

- Evaluating Expressions with Numbers
    - Identify coefficients and identify and combine like terms
    - Evaluate an expression
    - Simplify an expression using order of operations
    - Simplify expressions with integers using order of operations
    - Evaluate a variable expression with integers
- Absolute Value
    - Simplify an expression involving absolute value using order of operations
    - Evaluate an absolute value expression

3.3 Equations

- Solving Inequalities
    - Solve an inequality using the division and multiplication properties of inequality
    - Solve an inequality using the subtraction and addition properties of inequality
    - Solve one-step applications with linear inequalities
    - Solve a formula for a specific variable
- Applications of Equations
    - Use the subtraction and addition properties of equality to solve application problems
    - Use the division and multiplication properties of equality to solve application problems
    - Use a problem-solving strategy for word problems
    - Solve a number problem
- Solving Equations with Fractions and Decimals
    - Solve an equation involving fractions by eliminating the fractions and other steps
    - Solve an equation involving fractions by eliminating the fractions

- Solving Equations using Multiplication and Division
    - Translate an English sentence to an algebraic equation and solve using the division and multiplication properties of equality
    - Solve an equation using the division and multiplication properties of equality
    - Solve an equation that requires simplification using the division and multiplication properties of equality
    - Solve an equation involving fractions or decimals using the division and multiplication properties of equality
- Solving Equations using Addition and Subtraction
    - Translate an English sentence to an algebraic equation and solve using the subtraction and addition properties of equality
    - Solve an equation using the subtraction and addition properties of equality
    - Solve an equation that requires simplification using the subtraction and addition properties of equality
    - Solve an equation involving fractions or decimals using the subtraction and addition properties of equality
- Introduction to Inequalities
    - Graph an inequality on the number line
    - Use variables and algebraic symbols to describe inequalities
- Verifying Solutions
    - Determine whether an ordered pair is a solution of a system of linear inequalities
    - Determine whether an ordered pair is a solution of a system of linear equations
    - Verify a solution of an equation - ML

Chapter 4: Ratios, Proportions, and Percents

4.1 Ratios and Proportions

- Problem Solving with Ratios
    - Use ratios in applications
    - Translate phrases to expressions as rates or ratios
    - Find unit rates
    - Find unit price
- Proportions
    - Use the definition of proportion
    - Solve a problem involving proportions
- Ratios and Fractions
    - Write a ratio as a fraction
    - Write a rate as a fraction

4.2 Percents

- Writing Percents
    - Convert percents to decimals
    - Convert decimals and fractions to percents
    - Convert between percents, decimals, and fractions
- Introduction to Percents
    - Use the definition of percent
    - Convert percents to fractions
- Financial Applications of Percents
    - Solve sales tax applications
    - Solve mark-up applications
    - Solve discount applications
    - Solve commission applications
    - Determine the final cost of an item including sales tax and discounts
- Applications of Percents
    - Solve basic applications of percent
    - Solve applications of percent
    - Find percent increase and percent decrease
- Percent Equations
    - Write percent equations as proportions
    - Translate and solve percent proportions
    - Translate and solve basic percent equations

Chapter 5: Functions

5.1 Evaluating Functions

- Evaluating Exponential Functions
    - Evaluate exponential functions with base e
    - Evaluate exponential functions
- Function Notation
    - Evaluate a function using function notation
    - Understand function notation

5.2 Slopes of Lines

- Slopes of Lines
    - Use the relationship between rise and run to find the slope of a line from its graph
    - Use a geoboard to model slope

5.3 Polynomial Functions

- Introduction to Polynomials
    - Identify the types and degrees of polynomials
    - Evaluate a polynomial for a given value

- Operations with Polynomials
    - Divide a polynomial by a monomial
    - Divide monomials
    - Multiply monomials
    - Add and subtract monomials

Finite Mathematics | Table of Contents

        - Factor expressions using fractional or negative exponents
        - Factor expressions using greatest common factor and other technique

1.3 Rational Expressions

- Operations on Rational Expressions
    - Simplify rational expressions
    - Multiply rational expressions
    - Divide rational expressions
    - Add and subtract rational expressions

1.4 Equations

- Linear Equations
    - Identify identity, conditional, and inconsistent equations
    - Solve equations in one variable algebraically, variable just on one side
    - Solve equations in one variable algebraically, variable on both sides
- Quadratic Equations
    - Solve quadratic equations by factoring, leading coefficient 1
    - Solve quadratic equations by factoring, leading coefficient > 1
    - Solve quadratic equations by using the quadratic formula
- Rational Equations
    - Solve a rational equation, monomials in denominator
    - Solve a rational equation, binomials in denominator
    - Solve a rational equation, requires factoring to find least common denominator

1.5 Inequalities

- Linear Inequalities
    - Use interval notation
    - Use properties of inequalities
    - Solve simple inequalities in one variable algebraically
- Quadratic and Rational Inequalities
    - Solve quadratic inequalities in one variable, graph the solution set, and express the solution set using interval notation
    - Solve inequalities that involve rational expressions, graph the solution sets, and express the solution set using interval notation

1.6 Exponents

- Properties of Exponents
    - Understand exponent notation
    - Use the product rule of exponents
    - Use the quotient rule of exponents
    - Use the power rule of exponents
- Advanced Properties of Exponents
    - Use the negative and zero exponent rule
    - Find the power of a product

        - Find the power of a quotient
        - Simplify exponential expressions

1.7 Radicals

- Simplify Radicals
    - Evaluate square roots
    - Use the product rule to simplify square roots
    - Use the quotient rule to simplify square roots
- Operations with Radicals
    - Add and subtract square roots
    - Rationalize denominators with a monomial denominator
    - Rationalize denominators using the conjugate

Chapter 2: Linear Functions

2.1 Slopes and Equations of Lines

- Cartesian Coordinate System
    - Plot ordered pairs in a Cartesian coordinate system
    - Graph equations by plotting points
- Identify Slopes and Intercepts
    - Find the slope of a line given two points
    - Understand the relationship between the slope and y-intercept of a line and its equation
    - Find x -intercepts and y -intercepts
- Finding Linear Equations
    - Find equation of a line, in slope-intercept form, given slope and one point (point-slope formula)
    - Find equation, in slope-intercept form, of a line passing through two given points
    - Given slope and intercept, find the equation of a line and write it in standard form
    - Find the equation of vertical and horizontal lines
- Graphing Linear Equations
    - Graph a linear equation using the slope and the origin
- Parallel and Perpendicular Lines
    - Given the equations of two lines, determine whether their graphs are parallel or perpendicular
    - Write the equation of a line parallel to a given line
    - Write the equation of a line perpendicular to a given line

2.2 Linear Functions and Applications

- Linear Functions
    - Understand function notation
    - Evaluate a linear function at a value

- Applications of Linear Functions
    - Solve supply and demand problems using linear functions
    - Solve cost analysis problems using linear functions
    - Solve break even analysis problems using linear functions
- Mass and Temperature
    - Identify unit of mass correctly for a given situation
    - Convert between celsius and fahrenheit

2.3 The Least Squares Line

- The Least Squares Line
    - Find the linear regression equation given a list of data points
    - Make predictions using a line of best fit
    - Find and interpret the correlation coefficient

Chapter 3: Systems of Linear Equations and Matrices

3.1 Solving Linear Systems

- Linear Systems in Two Variables
    - Solve systems of equations in two variables by graphing
    - Solve systems of equations in two variables by substitution
    - Solve systems of equations in two variables by addition
    - Identify inconsistent and dependent systems of equations containing two variables, and express the solution of dependent equations
- Linear System in Three Variables
    - Determine whether an ordered triple is a solution to a system
    - Solve systems of three equations in three variables
    - Identify inconsistent and dependent systems of equations containing three variables, and express the solution of a system of dependent equations
- Applications of Linear Systems
    - Use systems of equations to investigate profits
    - Write and solve a system of equations in two variables from a word problem

3.2 Solving Linear Systems by the Gauss-Jordan Method

- Solving Systems with Gaussian Elimination
    - Convert between a system of equations and its corresponding augmented matrix
    - Use row operations to solve a system of linear equations in two variables
    - Use row operations to solve a system of linear equations in three variables
    - Use matrices to solve applications of systems of linear equations

3.3 Operations with Matrices

- Addition and Subtraction of Matrices
    - Determine the order of a matrix and describe elements within a matrix
    - Add or subtract matrices

- Multiplication of Matrices
    - Multiply a matrix by a scalar
    - Find the sum or difference of scalar multiples
    - Multiply two matrices

3.4 Matrix Inverses and Determinants

- Determinants of Matrices
    - Find the determinant of a 2x2 matrix
    - Find the determinant of a 3x3 matrix
- Inverse and Identity Matrices
    - Understand the identity matrix and how it relates to the inverse matrix
    - Determine if a matrix is invertible using the determinant
    - Find the inverse of a 2x2 matrix
    - Find the inverse of a 3x3 matrix
- Solving Systems with Inverses
    - Solve a system of linear equations using the inverse of a 2x2 matrix
    - Solve a system of linear equations using the inverse of a 3x3 matrix

3.5 Input-Output Models

- Input-Output Matrices
    - Create an input output matrix for a given application
    - Calculate the amount of commodities produced given an input output matrix and a production matrix
    - Determine the production matrix that will satisfy a given demand matrix
    - Find the production of a commodity in a closed input output model

Chapter 4: Linear Programming - The Graphical Method

4.1 Graphing Linear Inequalities

- Graphs of Linear Inequalities
    - Solve a linear inequality in two variables by graphing
    - Solve a linear system of inequalities by graphing

4.2 Solving Linear Programming Problems Graphically

- Solving Linear Programming Problems Graphically
    - Graph a feasible region given a set of constraints
    - Find the maximum value of an objective function given constraints by graphing

4.3 Applications of Linear Programming

- Applications of Linear Programming
    - Solve application problems using linear programming

Chapter 5: Linear Programming - The Simplex Method

5.1 Slack Variables and the Pivot

- Finding Solutions using Initial Simplex Tableaus
    - Rewrite a linear programming problem using slack variables and create an initial simplex tableau
    - Read a solution from an initial simplex tableau
    - Find a new solution by pivoting an initial simplex tableau

5.2 Maximization and Minimization Problems

- Solving Maximization Problems with the Simplex Method
    - Solve maximization problems using the simplex method
- Transposing a Matrix and Finding the Dual of a Linear Programming Problem
    - Determine the transpose of a matrix
    - Determine the dual of a linear programming problem
- Solving Minimization Problems with Duality
    - Solve minimization problems using the theorem of duality

5.3 Nonstandard Problems

- Solving Nonstandard Problems
    - Solve a nonstandard linear programming problem
    - Solve a nonstandard linear programming application problem

Chapter 6: Mathematics of Finance

6.1 Simple Interest

- Simple Interest
    - Calculate simple interest
    - Calculate interest discounts on a discounted loan

6.2 Compound Interest

- Compound Interest
    - Calculate periodically compounded interest
    - Calculate compound interest
    - Calculate continuously compounded interest
    - Calculate effective annual yield
- Geometric Sequences
    - Find the common ratio of a geometric sequence
    - Write terms of a geometric sequence
    - Write a recursive formula for a geometric sequence
    - Write an explicit formula for a geometric sequences
    - Find the sum of a finite geometric sequence

6.3 Annuities, Stocks, and Bonds

- Annuities
    - Calculate the value of an annuity
    - Calculate the payment needed to achieve a determined future value
- Stocks
    - Define stock terminology
    - Read a stock table

6.4 Installment Loans, Amortization, and Credit Cards

- Mortgages and Loans
    - Calculate the monthly payment and interest cost for a mortgage
    - Construct a loan amortization schedule
    - Choose the best installment loan plan
- Credit Cards
    - Recognize key features of credit cards
    - Calculate the average daily balance of a credit card
    - Determine interest to be paid on a card's next billing date

Chapter 7: Logic

7.1 Statements and Logical Connectives

- The Building Blocks of Logic
    - Identify and negate simple statements
    - Identify and negate quantified statements
- Symbolic Representation of Statements
    - Identify logical connectives and compound statements
    - Represent and/or/not statements in symbolic form and English
- Conditional Statements
    - Represent conditional statements in symbolic form and English
    - Write biconditional statements in symbolic form and English
    - Represent symbolic statements with parentheses using dominance of connectives

7.2 Truth Tables for Negation, Conjunction, and Disjunction

- Introduction to Truth Tables
    - Construct a truth table for a statement with a conjunction and/or a negation and determine its truth value
    - Construct a truth table for a statement with a disjunction and/or a negation and determine its truth value
    - Construct a truth table for a compound statement with a conjunction and disjunction and determine its truth value

7.3 Truth Tables for the Conditional and Biconditional

- Truth Tables for Conditional and Biconditional Statements
    - Construct a truth table for a conditional statement and determine its truth value
    - Construct a truth table for a biconditional statement and determine its truth value
- Self-Contradictions, Tautologies, and Implications
    - Identify self-contradictions, tautologies, and implications

7.4 Equivalent Statements

- Equivalent Statements and De Morgan's Equivalence Laws
    - Determine if two symbolic statements are equivalent using a truth table
    - Determine if two statements given in English are equivalent using a truth table
    - Determine if two statements are equivalent using De Morgan's laws
- Conditional States and Equivalence
    - Convert a disjunction into an equivalent conditional statement
    - Determine if two conditional statements are equivalent

7.5 Symbolic Arguments

- Drawing and Verifying Conclusions
    - Draw a conclusion from a conditional statement
    - Determine if an argument is valid using a truth table
    - Identify and validate the standard forms of arguments

7.6 Euler Diagrams and Syllogistic Arguments

- Euler Diagrams and Syllogistic Arguments
    - Identify syllogistic arguments
    - Represent a syllogistic argument with a Euler diagram
    - Determine if a syllogistic argument is valid with a Euler diagram

7.7 Switching Circuits

- Switching Circuits and Symbolic Logic
    - Convert between symbolic statements and switching circuits
    - Determine conditions for when a lightbulb will be turned on in a switching circuit
    - Determine if two switching circuits are equivalent

Chapter 8: Sets and Counting Principles

8.1 Set Concepts

- Introduction to Sets and Set Builder Notation
    - Represent a set using a written description and the roster method
    - Represent a set using set builder notation
- Set Equivalence
    - Identify the cardinal number for a set
    - Determine if two sets are equivalent
    - Determine if two sets are equal

- Types of Sets
    - Identify subsets, universal sets, and empty sets
    - Distinguish between finite and infinite sets
- Subsets and Proper Subsets
    - Identify subsets and proper subsets using set notation
    - Determine the number of subsets and proper subsets in a given set

8.2 Venn Diagrams and Set Operations

- Representing Sets with Venn Diagrams
    - Illustrate the universal set, a set, and complement of a set using a Venn diagram
    - Illustrate two sets using Venn diagram and set notation
- Set Relationships
    - Determine the complement of a set using Venn diagrams and proper set notation
    - Determine the intersection of two sets using Venn diagrams and set notation
    - Determine the union of two sets using Venn diagrams and set notation
- Set Operations
    - Perform operations on sets
    - Find the difference and cartesian product of two sets
    - Use Venn diagrams to find the result of set operations on two sets
    - Determine the cardinal number of a union of two finite sets

8.3 Venn Diagrams with Three Sets and Verification of Equality of Sets

- Construct a Venn Diagram of Three Sets
    - Perform set operations on three sets
    - Represent three sets using Venn diagrams

8.4 The Fundamental Counting Principle

- The Fundamental Counting Principle
    - Solve counting problems using the addition principle
    - Solve counting problems using the multiplication principle

8.5 Permutations and Combinations

- Permutations
    - Evaluate an expression with factorials
    - Find the number of permutations of n distinct objects using the multiplication principle
    - Find the number of permutations of n distinct objects using a formula
    - Find the number of permutations of n non-distinct objects
- Combinations
    - Find the number of combinations using the formula
    - Find the number of subsets of a set

Chapter 9: Probability

9.1 Introduction to Probability

- Sample Spaces and Events
    - Determine the sample space of an experiment
    - Determine an event of an experiment
- Fundamentals of Probability
    - Compute the probability of equally likely outcomes
    - Compute the probability of equally likely outcomes in application
- Probability with Permutations and Combinations
    - Compute probability involving permutations
    - Compute probability involving combinations
- The Complement Rule and Probability
    - Use the complement rule to compute probabilities
    - Compute the probability of an event happening at least once
- Odds and Expected Value
    - Compute the expected value of an event
    - Compute odds using probability

9.2 Conditional Probability and Independent Events

- Independent Events
    - Compute the probability of the union of two events
    - Compute the probability of two independent events occurring
- Dependent Events and Conditional Probability
    - Compute the conditional probability of a dependent event occurring
    - Compute the probability of two or more dependent events occurring

9.3 Binomial Probability

- Binomial Experiments
    - Identify a binomial experiment
    - Determine the binomial probability of success in an experiment performed multiple times
    - Calculate expected value for binomial probability

9.4 Bayes' Theorem

- Bayes' Theorem
    - Apply Bayes' theorem to solve an application problem

9.5 Random Variables, Probability Distributions and Expected Value

- Random Variables, Probability Distributions, and Expected Value
    - Calculate probability distribution
    - Calculate the expected value of a random variable

Chapter 10: Statistics

10.1 Sampling, Frequency Distributions, and Graphs

- Sampling and Parameters
    - Understand the definitions of population, sampling, statistic, parameter, and data
    - Identify stratified, cluster, systematic, and convenience sampling
    - Identify sampling errors and bias
    - Identify situations in which statistics can be misleading
- Frequency Distributions and Histograms
    - Construct and understand frequency tables for a set of data
    - Create and interpret histograms
    - Create and interpret stem-and-leaf plots
- Estimation from Graphs/Figures
    - Estimate using a pie chart or bar graph
    - Estimate using a line graph

10.2 Measures of Central Tendency and Measures of Dispersion

- Means and Medians
    - Find the mean of a set of data
    - Find the mean from a frequency table
    - Find the median of a set of data
- Modes, Midranges, and Choosing a Measurement
    - Find the mode of a set of data
    - Find the midrange of a set of data
    - Determine whether the mean, median, or mode is the best measure of center for a data set
- Standard Deviation
    - Compute the sample variance and sample standard deviation
    - Interpret the standard deviation of a set of data

10.3 The Normal Distribution, Margins of Error, and Skewness

- The Normal Distribution
    - Understand the notation and interpret the parameters of a normal distribution
    - Compute z-scores and use them to compare values from different data sets
    - Determine if a data set is skewed
- Percentiles, Quartiles, and Margins of Error
    - Find and interpret percentiles and quartiles of a data set
    - Calculate and interpret margin of error
- Problem Solving with the Normal Distribution
    - Standardize a normally distributed random variable
    - Calculate the mean and standard deviation of a standard normal distribution

Chapter 11: Nonlinear Functions

11.1 Properties of Functions

- Functions and Function Notation
    - Identify domain and range from a set of ordered pairs
    - Determine whether a relation represents a function
- Relations and Functions
    - Determine whether a function is one-to-one
    - Use the vertical line test to identify functions
    - Use the horizontal line test to identify one-to-one functions

11.2 Quadratic Functions

- Characteristics of Parabolas
    - Determine axis of symmetry and vertex of parabolas from a graph
    - Determine x- and y-intercepts of parabolas from a graph
- Graphs of Quadratic Functions
    - Find the direction a parabola opens and its axis of symmetry and vertex from the general form of its equation
    - Identify the axis of symmetry and vertex of a parabola from its equation in standard form
    - Write the equation of a quadratic function given vertex and a point on a graph
    - Write the equation of a quadratic function given intercepts on a graph
    - Write the equation of a quadratic function in standard form given the equation in general form
- Applications of Quadratic Functions
    - Find the domain and range of a quadratic function
    - Determine the maximum and minimum values of quadratic functions
    - Find the x- and y-intercepts of a quadratic function

11.3 Transformations of Functions

- Transformations of Functions
    - Graph functions using vertical and horizontal shifts
    - Graph functions using reflections about the x-axis and the y-axis
    - Graph functions using compressions and stretches
    - Combine transformations

11.4 Polynomial and Rational Functions

- Polynomial Functions
    - Identify power functions and polynomial functions
    - Graph polynomial functions
    - Write a formula for a polynomial function from a graph
    - Determine equation of a polynomial given key information

- Asymptotic Behavior of Rational Functions
    - Use arrow notation to describe local behavior and end behavior of rational functions
    - Identify vertical asymptotes and removable discontinuities of rational functions
    - Identify horizontal and slant asymptotes of rational functions
- Graphs and Applications of Rational Functions
    - Find the intercepts of a rational function
    - Graph rational functions
    - Find the equation of a rational function from a graph

11.5 Exponential and Logarithmic Functions

- Identify and Evaluate Exponential Functions
    - Identify exponential functions
    - Evaluate exponential functions
    - Calculate continuous growth and decay
- Graphing Exponential Functions
    - Graph exponential functions
    - Graph exponential functions using transformations
- Relate Logarithms and Exponents
    - Convert from logarithmic to exponential form
    - Convert from exponential to logarithmic form
- Evaluate Logarithmic Expressions
    - Evaluate logarithms with positive integer solutions
    - Evaluate logarithms with negative integer solutions
    - Use common logarithms
    - Use natural logarithms
- Basic Properties of Logarithms
    - Understand the basic properties of logarithms
    - Use the product rule for logarithms
    - Use the quotient rule for logarithms
    - Use the power rule for logarithms
- Solve Logarithmic Equations
    - Use the definition of a logarithm to solve logarithmic equations
    - Use logarithm properties and the definition of the logarithm to solve logarithmic equations
    - Use the one-to-one property of logarithms to solve logarithmic equations
- Applications of Exponential and Logarithmic Functions
    - Model exponential growth
    - Model exponential decay
    - Applied logarithmic models
    - Choose an appropriate model for data
    - Express an exponential model in base e

Chapter 12: Markov Chains

12.1 Properties of Markov Chains

- Transitions
    - Identify transition diagrams and transition matrices
    - Create a transition diagram and matrix for a given word problem
- States
    - Find the second state of a system given a transition matrix and initial state
    - Find powers of a transition matrix
    - Solve application problems using powers of transition matrices

12.2 Regular Markov Chains

- Regular Transition Matrices and Stationary Matrices
    - Determine if a transition matrix is regular
    - Find a stationary matrix for a given transition matrix
    - Solve application problems using stationary matrices

12.3 Absorbing Markov Chains

- Absorbing States
    - Find absorbing states given a transition matrix
    - Determine if a transition matrix is for an absorbing Markov chain
    - Write a transition matrix in standard form
- Limiting Matrix
    - Find the limiting matrix for an absorbing Markov chain