

Based on the book: College Algebra by Sullivan (Pearson publications)
Other books cover similar topics.

College Algebra Assessment Exam

Topics to study:

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| Chpt 5: Polynomial & Rational Functions | 5.1.1 | Identify Polynomial Functions and Their Degree |
| | 5.1.2 | Graph Polynomial Functions Using Transformations |
| | 5.1.3 | Identify the Real Zeros of a Polynomial Function and Their Multiplicity |
| | 5.1.4 | Analyze the Graph of a Polynomial Function |
| | 5.1.5 | Build Cubic Models from Data |
| | 5.2.1 | Find the Domain of a Rational Function |
| | 5.2.2 | Find the Vertical Asymptotes of a Rational Function |
| | 5.2.3 | Find the Horizontal or Oblique Asymptotes of a Rational Function |
| | 5.3.1 | Analyze the Graph of a Rational Function |
| | 5.3.2 | Solve Applied Problems Involving Rational Functions |
| | 5.4.1 | Solve Polynomial Inequalities |
| | 5.4.2 | Solve Rational Inequalities |
| | 5.5.1 | Use the Remainder and Factor Theorems |
| | 5.5.2 | Use the Rational Zeros Theorem to List the Potential Rational Zeros of a Polynomial Function |
| | 5.5.3 | Find the Real Zeros of a Polynomial Function |
| Chpt 6: Exponential & Logarithmic Functions | 5.5.4 | Solve Polynomial Equations |
| | 5.5.5 | Use the Theorem for Bounds on Zeros |
| | 5.5.6 | Use the Intermediate Value Theorem |
| | 5.6.1 | Use the Conjugate Pairs theorem |
| | 5.6.2 | Find a Polynomial Function with Specified Zeros |
| | 5.6.3 | Find the Complex Zeros of a Polynomial |
| | 6.1.1 | Form a Composite Function |
| | 6.1.2 | Find the Domain of a Composite Function |
| | 6.2.1 | Determine Whether a Function is One-to-One |
| | 6.2.2 | Determine the Inverse of a Function Defined by a Map or a Set of Ordered Pairs |
| | 6.2.3 | Obtain the Graph of the Inverse Function from the Graph of the Function |
| | 6.2.4 | Find the Inverse of a Function Defined by an Equation |
| | 6.3.1 | Evaluate Exponential Functions |
| | 6.3.2 | Graph Exponential Functions |
| | 6.3.3 | Define the Number e |
| | 6.3.4 | Solve Exponential Equations |
| | 6.4.1 | Change Exponential Expressions to Logarithmic Expressions and Logarithmic Expressions to Exponential Expressions |
| | 6.4.2 | Evaluate Logarithmic Expressions |
| | 6.4.3 | Determine the Domain of a Logarithmic Function |
| | 6.4.4 | Graph Logarithmic Functions |
| | 6.4.5 | Solve Logarithmic Equations |
| | 6.5.1 | Work with the Properties of Logarithms |
| | 6.5.2 | Write a Logarithmic Expression as a Sum or Difference of Logarithms |
| | 6.5.3 | Write a Logarithm Expression as a Single Logarithm |
| | 6.5.4 | Evaluate Logarithms Whose Base Is Neither 10 nor e |

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| | 6.6.1 | Solve Logarithmic Equations |
| | 6.6.2 | Solve Exponential Equations |
| | 6.6.3 | Solve Logarithmic and Exponential Equations Using a Graphing Utility |
| | 6.7.1 | Determine the Future Value of a Lump Sum of Money |
| | 6.7.2 | Calculate Effective Rates of Return |
| | 6.7.3 | Determine the Present Value of a Lump Sum of Money |
| | 6.7.4 | Determine the Rate of Interest or Time Required to Double a Lump Sum of Money |
| | 6.8.1 | Find Equations of Populations That Obey the Law of Uninhibited Growth |
| | 6.8.2 | Find Equations of Populations That Obey the Law of Decay |
| | 6.8.3 | Use Newton's Law of Cooling |
| | 6.8.4 | Use Logistic Models |
| Chpt: 8 | 8.1.1 | Solve Systems of Equations by Substitution |
| | 8.1.2 | Solve Systems of Equations by Elimination |
| Systems of | 8.1.3 | Identify Inconsistent Systems of Equations Containing Two Variables |
| Equations & | 8.1.4 | Express the Solution of a System of Dependent Equations Containing Two Variables |
| Inequalities | 8.1.5 | Solve Systems of Three Equations Containing Three Variables |
| | 8.1.6 | Identify Inconsistent Systems of Equations Containing Three Variables |
| | 8.1.7 | Express the Solution of a System of Dependent Equations Containing Three Variables |
| | 8.2.1 | Write the Augmented Matrix of a System of Linear Equations |
| | 8.2.2 | Write the System of Equations from the Augmented Matrix |
| | 8.2.3 | Perform Row Operations on a Matrix |
| | 8.2.4 | Solve a System of Linear Equations Using Matrices |
| | 8.3.1 | Evaluate 2 by 2 Determinants |
| | 8.3.2 | Use Cramer's Rule to Solve a System of Two Equations Containing Two Variables |
| | 8.3.3 | Evaluate 3 by 3 Determinants |
| | 8.3.4 | Use Cramer's Rule to Solve a System of Three Equations Containing Three Variables |
| | 8.3.5 | Know Properties of Determinants |
| | 8.4.1 | Find the Sum and Difference of Two Matrices |
| | 8.4.2 | Find Scalar Multiples of a Matrix |
| | 8.4.3 | Find the Product of Two Matrices |
| | 8.4.4 | Find the Inverse of a Matrix |
| | 8.4.5 | Solve a System of Linear Equations Using an Inverse Matrix |
| | 8.6.1 | Solve a System of Nonlinear Equations Using Substitution |
| | 8.6.2 | Solve a System of Nonlinear Equations Using Elimination |
| | 8.7.1 | Graph an Inequality |
| | 8.7.2 | Graph a System of Inequalities |
| Chpt 9: | 9.1.1 | Write the First Several Terms of a Sequence |
| | 9.1.2 | Write the Terms of a Sequence Defined by a Recursive Formula |
| | 9.1.3 | Use Summation Notation |
| Sequences, | 9.1.4 | Find the Sum of a Sequence |
| and the | 9.2.1 | Determine if a Sequence is Arithmetic |
| Binomial | 9.2.2 | Find a Formula for an Arithmetic Sequence |
| Theorem | 9.2.3 | Find the Sum of an Arithmetic Sequence |
| | 9.3.1 | Determine if a Sequence is Geometric |
| | 9.3.2 | Find a Formula for a Geometric Sequence |
| | 9.3.3 | Find the Sum of a Geometric Sequence |

9.3.4 Determine whether a Geometric Series Converges or Diverges

9.3.5 Solve Annuity Problems

9.5.1 Evaluate a Binomial Coefficient

9.5.2 Use the Binomial Theorem

10.1.1 Find All Subsets of a Set

Chpt 10: 10.1.2 Count the Number of Elements in a Set

10.1.3 Solve Counting Problems Using the Multiplication Principle

Counting 10.2.1 Solve Counting Problems Using Permutations Involving n Distinct Objects

10.2.2 Solve Counting Problems Using Combinations

10.2.3 Solve Counting Problems Using Permutations Involving n Nondistinct Objects

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Probability 10.3.1 Construct Probability Models

10.3.2 Compute Probabilities of Equally Likely Outcomes

10.3.3 Find Probabilities of the Union of Two Events

10.3.4 Use the Complement Rule to Find Probabilities