



Survey of Mathematics

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Alta Survey of Mathematics was developed to meet the scope and sequence of a typical one semester Survey of Mathematics course. To develop the course, Knewton used a variety of different source content, including OpenStax, videos created by a Math Professor we have partnered with, and a team of Subject Matter Experts (SMEs). The SMEs come from diverse backgrounds and are all accomplished academics in the field of Mathematics.

Alta Survey of Mathematics has two instructional sequences for every learning objective, giving students multiple opportunities to learn new concepts. Between our OpenStax, Video, and Knewton SMEs, we were able to solicit ideas from math instructors and students at all levels of higher education. Alta Survey of Mathematics covers the typical breadth of survey topics and also provides the necessary depth to ensure the course is manageable and engaging for instructors and students alike.

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Chapter 1: Critical Thinking Skills

1.1 Inductive and Deductive Reasoning

- Inductive and Deductive Reasoning
 - Understand and use inductive reasoning
 - Understand and use deductive reasoning

1.2 Estimation

- Estimation by Rounding
 - Estimate a value by rounding a whole number
 - Estimate a value by rounding a decimal
- Estimation from Graphs/Figures
 - Estimate using a pie chart or bar graph
 - Estimate using a line graph

1.3 Problem Solving

- Problem Solving
 - Identify the piece of information needed to solve a problem and unnecessary information given in a problem
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Chapter 2: Sets

2.1 Set Concepts

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2.2 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
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- Set Relationships
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- Euler Diagrams and Syllogistic Arguments
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- Early Computational Methods
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5.6 Rules of Exponents and Scientific Notation

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6.5 Variation

- Solving Variation Problems
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- Vertical, Horizontal, Parallel, and Perpendicular Lines
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- Linear Inequalities in Two Variables
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7.5 Systems of Linear Inequalities

- Solving Systems of Linear Inequalities
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- Mass and Temperature
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- Points, Lines, and Planes
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 - Use properties of similar polygons to solve for a missing side
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-

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-

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- The Fundamental Counting Principle
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-

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- Random Variables, Probability Distributions, and Expected Value
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Chapter 13: Statistics

13.1 Sampling, Frequency Distributions, and Graphs

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15.3 Apportionment Methods

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-

- Apportionment Methods
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- Flaws of the Apportionment Methods
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