

MTH 140 Statistics Videos

Chapter 1 Picturing Distributions with Graphs

Individuals and Variables

Categorical Variables: Pie Charts and Bar Graphs

Categorical Variables: Pie Charts and Bar Graphs

Quantitative Variables: Histograms

Interpreting Histograms

Quantitative Variables: Stemplots

Time Plots

<http://www.khanacademy.org/math/statistics/v/reading-bar-graphs>

<http://www.khanacademy.org/math/statistics/v/reading-pie-graphs--circle-graphs>

<http://www.khanacademy.org/math/statistics/v/undefined/v/undefined/v/u08-l1>

Chapter 2 Describing Distributions with Numbers

Measuring Center: the Mean

Measuring Center: the Median

Comparing the Mean and the Median

Measuring Spread: the Quartiles

The Five-Number Summary and Boxplots

The Five-Number Summary and Boxplots

Spotting Suspected Outliers

Measuring Spread: the Standard Deviation

Choosing Measures of Center and Spread

<http://www.khanacademy.org/math/statistics/v/statistics--the-average>

<http://www.khanacademy.org/math/statistics/v/mean-median-and-mode>

<http://www.khanacademy.org/math/statistics/v/box-and-whisker-plots>

<http://www.khanacademy.org/math/statistics/v/reading-box-and-whisker-plots>

<http://www.khanacademy.org/math/statistics/v/statistics--standard-deviation>

Chapter 3 Normal Distributions

Density Curves

Describing Density Curves

Normal Distributions

The 68-95-99.7 Rule

The Standard Normal Distribution

Finding Normal Proportions

Using the Standard Normal Table

Finding a Value Given a Proportion

https://www.khanacademy.org/math/probability/statistics-inferential/normal_dis

<http://www.youtube.com/watch?v=cgxPcdPbuJl>

https://www.khanacademy.org/math/probability/statistics-inferential/normal_dis

<http://www.youtube.com/watch?v=1o3mUf6hemw>

Chapter 4 Scatterplots and Correlation

Explanatory and Response Variables
Displaying Relationships: Scatterplots
Interpreting Scatterplots
Adding Correlational Variables to Scatterplots
Measuring Linear Association: Correlation
Facts about Correlation

<http://www.youtube.com/watch?v=ikvsJtY9KgA>

<http://www.youtube.com/watch?v=Ypg04qUBt5o>
http://www.youtube.com/watch?v=DVQ1kA1Mj_w
<http://www.youtube.com/watch?v=0QkoQGepl4U>

Chapter 5 Regression

Regression Lines
The Least-Squares Regression Line
Facts about Least-Squares Regression
Residuals
Influential Observations
Cautions about Correlation and Regression
Association does Not Imply Causation

<https://www.khanacademy.org/math/probability/regression/regression-correlation>
http://www.youtube.com/user/EducatorVids?v=B8bG5B7RF_k&feature=pv&ad=1
<http://www.youtube.com/watch?v=jEEJNz0RK4Q>
http://www.youtube.com/watch?v=-qlb_nZvN_U

<https://www.khanacademy.org/math/probability/regression/regression-correlation>
<https://www.khanacademy.org/math/probability/regression/regression-correlation>

Chapter 8 Producing Data: Sampling

Population vs Sample
How to Sample Badly
Simple Random Samples
Inference about Population
Other Sampling Designs
Cautions about Sample Surveys

<http://www.youtube.com/watch?v=FYktqGhdhCc>
<http://www.youtube.com/watch?v=yx5KZi5QArQ>
<http://www.youtube.com/watch?v=FtZavrh0eaw>

Chapter 9 Producing Data: Experiments

Observation vs Experiment
Subjects, Factors, Treatments
How to Experiment Badly
Randomized Comparative Experiments
Logic of Randomized Comparative Experiments
Cautions about Experimentation
Matched Pairs and Other Block Designs

<http://www.youtube.com/watch?v=2OnduwEujlk>

Chapter 10 Introducing Probability

The Idea of Probability
The Search for Randomness
Probability Models
Probability Rules
Discrete Probability Models
Continuous Probability Models
Random Variables

http://www.youtube.com/watch?v=fZwKpkhyL_k
<http://www.youtube.com/watch?v=GWRIiyTsomc>
<http://www.youtube.com/watch?v=fxEwT2-cPnA>
<http://www.youtube.com/watch?v=YhjzwySWF9c>
<http://www.youtube.com/watch?v=IYdiKeQ9xEI>

Chapter 11 Sampling Distributions

Parameters and Statistics

Statistical Estimation and the Law of Large Numbers
Sampling Distributions
The Sampling Distribution of X Bar
The Central Limit Theorem

<http://www.youtube.com/watch?v=1o6N8Q2rOYA>
<http://www.youtube.com/watch?v=gF-XOHRX7wk>
<http://www.youtube.com/watch?v=VpuN8vCQ-M>
<http://www.youtube.com/watch?v=zXFse8GqtoQ>

<http://www.youtube.com/watch?v=JNm3M9cqWyc>

Chapter 12 General Rules of Probability

Independence and the Multiplication Rule
The General Addition Rule
Conditional Probability

The General Multiplication Rule
Independence Again
Tree Diagrams

<http://www.youtube.com/watch?v=ED8UdPZVCCQ>
<http://www.youtube.com/watch?v=QE2uR6Z-NcU>
<http://www.youtube.com/watch?v=4PwnvqGEHoU>
<http://www.youtube.com/user/EducatorVids?v=S6x2ge8YHhs&feature=pyv&ad=8>
<http://www.youtube.com/watch?v=YyhuySxKvu8>

<http://www.youtube.com/watch?v=mkDzml7YOx0>

Chapter 14 Introduction to Inference

The Reasoning of Statistical Estimation
Margin of Error and Confidence Level

Confidence Intervals for a Population Mean
The Reasoning Tests of Significance
Stating Hypotheses
P-value and Statistical Significance
Tests for a Population Mean
Significance from a Table

<http://www.youtube.com/watch?v=Hn6C21GC0vA>
<http://www.youtube.com/watch?v=Vw7-HZ9g8Gs>
<http://www.youtube.com/watch?v=njzSzOTOGt8>

<http://www.youtube.com/watch?v=cW16A7hXbTo>
<http://www.youtube.com/watch?v=BWJRy-G8u0>

Chapter 15 Thinking about Inference

Conditions for Inference in Practice
How Confidence Intervals Behave
How Significance Tests Behave
Planning Studies: Sample Size for Confidence Intervals
Planning Studies: The Power of a Statistical Test

<http://www.youtube.com/watch?v=BQGjMqhzulg>
http://www.youtube.com/watch?v=FHT6e_mdGoU

Chapter 17 Inference About a Population Mean

Conditions for Inference About a Mean
The t Distributions
The One-Sample t Confidence Interval
The One-Sample t Test
Matched Pairs t Procedures
Robustness of t Procedures

<http://www.khanacademy.org/math/statistics/v/one-tailed-and-two-tailed-tests>
http://www.youtube.com/watch?v=QoV_TL0IDGA
<http://www.khanacademy.org/math/statistics/v/t-statistic-confidence-interval>
<http://www.khanacademy.org/math/statistics/v/z-statistics-vs-t-statistics>
<http://www.youtube.com/watch?v=l-L9nSjfdQo>

Chapter 18 Two-Sample Problems

Two-Sample Problems
Comparing Two Population Means
Two-Sample t Procedures

<http://www.khanacademy.org/math/statistics/v/comparing-population-proportion>
http://www.youtube.com/watch?v=8lbl_elv-tA

Chapter 19 Inference about a Population Proportion

The Sample Proportion
Large Sample Confidence Intervals

Accurate Confidence Intervals for a Proportion
Choosing the Sample Size
Significance Tests for a Proportion

<http://www.khanacademy.org/math/statistics/v/confidence-interval-example>
<http://www.khanacademy.org/math/statistics/v/confidence-interval-1>
<http://www.khanacademy.org/math/statistics/v/confidence-interval-of-difference>
http://www.youtube.com/watch?v=3ReWri_jh3M
<http://www.youtube.com/watch?v=AbHMPfppsi8>
<http://www.youtube.com/watch?v=QSCUUFWztt14>

Chapter 20 Comparing Two Proportions

Two-Sample Problems: Proportions
Sampling Distribution Difference Between Proportions
Large Sample Confidence Intervals for Comparing Proportions
Accurate Confidence Intervals for Comparing Proportions
Significance Tests for Comparing Proportions

<http://www.khanacademy.org/math/statistics/v/one-tailed-and-two-tailed-tests>
<http://www.khanacademy.org/math/statistics/v/difference-of-sample-means-distribution>
<http://www.khanacademy.org/math/statistics/v/large-sample-proportion-hypothesis-test>
<http://www.khanacademy.org/math/statistics/v/comparing-population-proportions>
<http://www.khanacademy.org/math/statistics/v/comparing-population-proportions>
<http://www.khanacademy.org/math/statistics/v/hypothesis-test-for-difference-of-proportions>

Chapter 22 Two Categorical Variables: The Chi-Square Test

Two-way Tables

The Problem of Multiple Comparisons

Expected Counts in Two-Way Tables

The Chi-Square Test Statistic

Cell Counts Required for the Chi-Square Test

Uses of the Chi-Square Test

The Chi-Square Distributions

The Chi-Square Test for Goodness of Fit

<http://www.khanacademy.org/math/statistics/v/chi-square-distribution-introductory>

<http://www.khanacademy.org/math/statistics/v/contingency-table-chi-square-test>

Chapter 23 Inference for Regression

Conditions for Regression Inference

Estimating the Parameters

Testing the Hypothesis of no linear relationship

Testing Lack of Correlation

Confidence Intervals for the Regression Slope

Inference about Prediction

Checking the Conditions for Inference

<http://www.khanacademy.org/math/statistics/v/regression-line-example>

<http://www.khanacademy.org/math/statistics/v/second-regression-example>

<http://www.khanacademy.org/math/statistics/v/correlation-and-causality>