

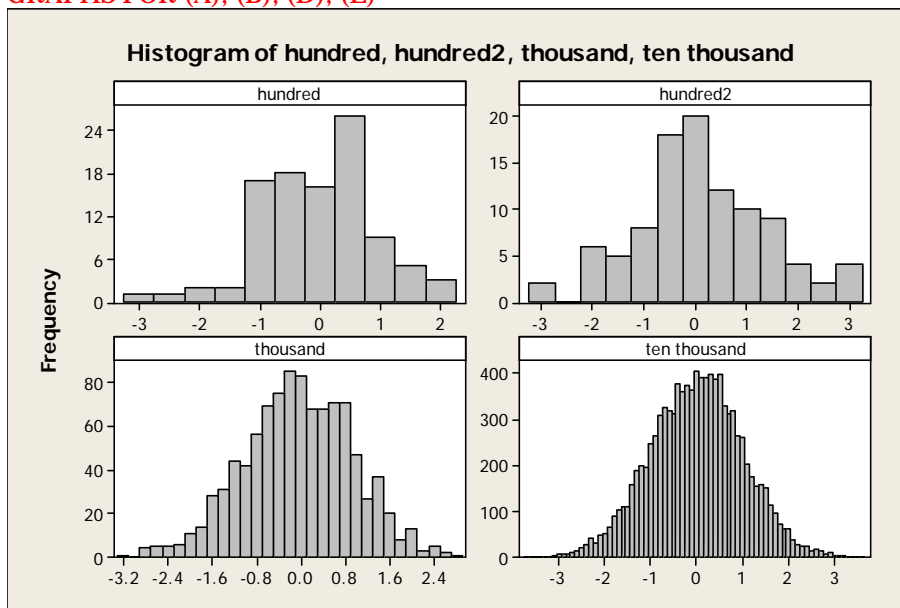
Chapters 11 and 12: Randomness and Surveys

- Pick one of the topics we mentioned at the end of lecture. Between you and the other members in your row, come up with a question or two that we can ask. Things to think about: multiple choice, fill in, short answer? If fill in, do you want me to check that the entered response is a number or a word? If a number, is there a lower bound/upper bound for what's acceptable? Once you have your question(s), have one person in the row email them to Amy: amy.morrow@canyons.edu.

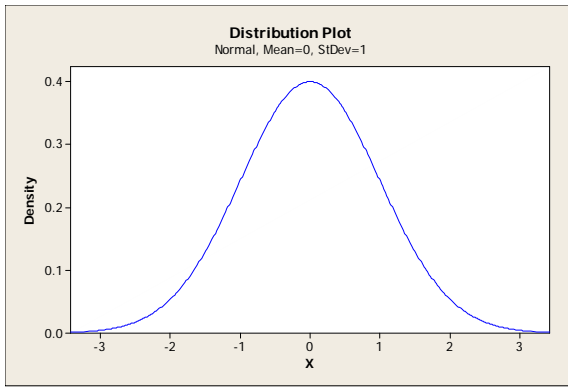
THIS NEEDS TO BE EMAILED TO ME (I WILL BE CHECKING EMAIL BEFORE YOU GET CHECKED OFF)! TAKE YOUR BEST SHOT, AND WE WILL 'FIX' THESE NEXT TIME.

- Using a method similar to what was done in-class, you are going to generate samples from the normal model with mean 0 and standard deviation 1. In Minitab, Calc > Random Data > Normal...
 - Generate 100 samples, and plot a histogram of your results.

GRAPHS FOR (A), (B), (D), (E)



- Repeat part (a) to get a plot of 100 new samples.
SEE ABOVE
- Compare your answers to a and b.
THEY ARE SLIGHTLY DIFFERENT (DUE TO RANDOMNESS), BUT HAVE A BASIC UNDERLYING BELL-SHAPE (ROUGHLY UNIMODAL AND SYMMETRIC).
- Generate 1000 samples, and plot a histogram of your results.
SEE ABOVE
- Generate 10000 samples, and plot a histogram of your results.
SEE ABOVE
- Using Graph > Probability Distribution Plot > View Single, plot the normal model.



g) Compare your answers to a-e.

AS WE INCREASE THE SAMPLE SIZE, THE HISTOGRAMS LOOK MORE AND MORE LIKE THE REAL NORMAL DISTRIBUTION IN PART (F)

3. Name and describe the kind of bias that might be present if the management decides that instead of subjecting people to random drug testing, they'll just...

- a) Hold department meetings and drug test the employees that attend
CONVENIENCE SAMPLING—THEY WILL UNDERSAMPLE DRUG USERS
- b) Interview employees about possible drug use
RESPONSE BIAS—THE INTERVIEWER WILL INTRODUCE BIAS.
- c) Offer additional employee compensation for those who agree to be drug tested
VOLUNTARY RESPONSE—DRUG USERS WILL NOT OPT TO TAKE THE TEST

4. Listed below are 10 students. Use Minitab to produce a random sample of 4 of them. Clearly explain your method.

Eric R.	Shenica R.
Michelle N.	Andrew T.
Brendan T.	Jose F.
Brittany N.	Brandon S.
Andrew K.	Audrey P.
Claudia E.	Brenda J.

- **COPY AND PASTE THE NAMES INTO A COLUMN IN MINITAB**
- **MINITAB > CALC > RANDOM DATA > SAMPLE FROM COLUMNS**
- **DO NOT CHECK 'WITH REPLACEMENT'**

**Audrey P.
Brenda J.
Brittany N.
Claudia E.**