HT's and CI's for Two Proportions

CREDIT: The questions on this document were written by Erik Packard, PhD, Associate Professor of Mathematics at Colorado Mesa University.

- Problem 7

    - Can we prove at the 10% significance level that the percentage of all credit card accounts with balances over $1000 is different between Nevada and California?

	Nevada:	California:
Number of accounts with $1000+ balances after the last payment	512	555
Total number of accounts in the sample	1200	1400

A) Before collecting data, what is the chance of not concluding the percentages differ when they actually do?

B) Before collecting data, what is the chance of concluding the percentages differ when they don't?

C) Give the critical value(s) (from the appropriate table).

D) Give the value of the test statistic (from the data).

E) Is the answer Yes or No?

F) What is the *p*-value?

G) Describe the meaning of the *p*-value in everyday terms.

H) Give a 90% CI for the difference in percentages of all credit card accounts with over $1000 in outstanding balances between Nevada and California.

- Problem 8
    - Can we prove at the 10% significance level that the percentage of all credit card accounts with balances over $1000 is higher in Nevada than it is in California?

	Nevada:	California:
Number of accounts with $1000+ balances after the last payment	512	555
Total number of accounts in the sample	1200	1400

C) Give the critical value(s) (from the appropriate table).

D) Give the value of the test statistic (from the data).

E) Is the answer Yes or No?

F) What is the *p*-value?