Problem 3

Researchers gave 40 index cards to a waitress at an Italian restaurant in New Jersey. Before delivering the bill to each customer, the waitress randomly selected a card and wrote on the bill the same message that was printed on the index card. Twenty of the cards had the message, “The weather is supposed to be really good tomorrow. I hope you enjoy the day!” Another 20 cards contained the message, “The weather is supposed to be not so good tomorrow. I hope you enjoy the day anyway!” After the customers left, the waitress recorded the amount of the tip (percent of bill) before taxes. Here are the tips for those receiving the good-weather message:[**22**](javascript:ShowFootnote('21_22'))

http://macmillanhighered.com/BrainHoney/Resource/6710/ebooks.bfwpub.com/bps7e/tables/21_T_UN_26.gif

The tips for the 20 customers who received the bad weather message are

http://macmillanhighered.com/BrainHoney/Resource/6710/ebooks.bfwpub.com/bps7e/tables/21_T_UN_27.gif

(a)Make [stemplots](javascript:Define('stemplot')) or [histograms](javascript:Define('histogram')) of both sets of data. Because the [distributions](javascript:Define('distribution')) are reasonably symmetric with no extreme [outliers](javascript:Define('outlier')), the *t* procedures will work well. (Use R to graph) (4 pts)

(b)Is there good evidence that the two different messages produce different percent tips? State hypotheses, carry out a two-sample *t* test, and report your conclusions. (Use SAS for a two sample t-test) (14 pts)

(c) Use R in order to run a randomization test (one sided). (12 pts)