

Math 263: Spring 2014
Quiz 11

Name _____

Daniela is taking a flight from Boston to Tucson with a change of planes in Chicago. There is a 20% chance that her first flight to Chicago is on time. If the plane is on time, there is a 90% chance that her luggage makes it onto the second flight with her. If the first flight is late, there is a 60% chance that her luggage gets onto the second flight with her.

Let T be the event that the first flight is on time; let L be the event that her luggage gets onto the second flight with her.

- (a) Using these events and their complements (the complements are "not T " and "not L "), write the three probabilities that you are given as unconditional probabilities (that is, as $P(\text{Event})$) or as conditional probabilities (that is, as $P(\text{Event}_1 | \text{Event}_2)$)

(i) $20\% = P(\text{_____})$

(ii) $90\% = P(\text{_____})$

(iii) $60\% = P(\text{_____})$

- (b) Using the probabilities given, fill in the table for 100 such flights:

	Flight 1 on Time	Flight 1 Not on Time	Total
Luggage on second flight			
Luggage not on second flight			
Total			100

- (c) If you pick up Daniela at the Tucson airport and she has her luggage with her, what is the probability that her first flight was on time? (*Leave your answer as a fraction.*)

- (d) If the probability *increases* of the luggage getting on to the second flight if the first flight is late, what happens to your answer to part (c)? Does it Increase _____ or Decrease _____ or Stay the same _____? (*check one*)
Reason: