Department of Mathematics and Statistics Semester 122

STAT319	Quiz 1		Monday February 18, 2013
Name:		ID #:	

- 1) A machine produces components for use in mobile phones. At any given time, the machine is in only one of three stages: operational, out of control, or down. From experience with this machine, a quality control engineer knows that the probability that the machine is out of control is 0.02, and that it is down is 0.015
 - a) What is the probability that the machine is either down or out of control?

b) Unless the machine is down, it can be used to produce a single item. What is the probability that the machine can be used to produce a single item?

- 2) The probability that a new design will be successful if a competitor does not come up with a similar product is 0.67. The probability that the new design is successful in the presence of a competitor's new product is 0.42. The probability the competing firm will come out with a new product during the period in question is 0.35.
 - a) What is the probability that the new design is successful?

b) If a new design is not successful what is the probability that it has a competitor?