

Probability Modeling Standard

A new strain of neuro-virus has hit SI. This one however is not as infectious nor as nauseating and if the infected ones can be treated before they show symptoms, the strain can be stopped. Predictably, Mr. Maychrowitz has come to the rescue by concocting a serum as well as a 100% accurate blood test to identify those infected. He has also determined on his slide rule that the probability of infection for any random individual is 0.00683. Unfortunately, all 1465 students need to be quarantined until everyone has been tested, there are only enough supplies to test 350 blood samples, and there won't be enough serum for all 1465 students so the infected ones need to be identified.

- 1) Based upon this information what is the most likely number of infected students?

- 2) Find the probability that 5 randomly selected students will test negative.

- 3) Devise and articulate a plan to test everyone to determine which students are infected so that they can be treated.