Unit 4 Discussion Example - Applications of Probability

Post 2: Reply to a Classmate

1) My classmate's data table was:

	Employee has run a computer security scan in the past 60 days.	Employee has NOT run a computer security scan in the past 60 days.	Total
Employee has installed the latest patches to the operating system on their computer.	57	213	269
Employee has NOT installed the latest patches to the operating system on their computer.	187	43	231
Total	244	256	500

I will use the conditional probability formula of $P\ (A|B) = \frac{P(A \cap B)}{P(B)}$

A = the employee has NOT installed the latest patches to the operating system

B = the employee has NOT run a computer security scan in the past 60 days

P (employee has NOT installed patches of OS AND employee has NOT run security scan) = P(A ∩ B) = 43/500 = 0.086= 8.6%

P(employee has NOT run security scan) = P (B) = 256/500 = 0.512 = 51.2%

$$\frac{P(A\ \cap B)}{P(B)} = \frac{0.086}{0.512} = 0.1680 = 16.80\%$$

This additional analysis provides more meaning to the security risk analysis. We know there is a 51.2% chance that any random employee has not run the security scan. Given that, what then is the probability that they further have not installed the security patches to their operation system? This really is the worst-case scenario for security. Therefore, we know that about 17% of our employees are most vulnerable! That is 17% of 10,000 = 1700 employees!! Yikes!