



# Accounting 6001 Midterm Report

Student ID: 26

Overall Score: 24 / 30

Professor's Note: Excellent work keep doing what you're doing!

## Strengths:

- Basic Probability
- Confidence Intervals
- Data Analysis
- Descriptive Statistics
- Random Variables / Normal Distribution
- t-distribution

## Areas for Growth (with resources):

- Bayes / Conditional Probability (See:

<https://www.khanacademy.org/math/statistics-probability/probability-library#probability-independent-dependent>)

- Central Limit Theorem (See:

<https://www.khanacademy.org/math/statistics-probability/sampling-distributions-library>)

## Practice Questions:

Q1. If  $P(A)=0.3$ ,  $P(B)=0.4$ , and  $P(A \text{ and } B)=0.12$ , are A and B independent?

Q2. A test detects a disease 95% of the time. False positive=5%. Prevalence=1%. Find  $P(\text{Disease}|\text{Positive})$ .

Q3. A population has mean 40 and sd 12. If  $n=36$ , what is the probability that the sample mean is greater than 42?

Q4. The population mean is 50,  $sd=10$ . If  $n=100$ , what is SE?

## Solutions:

Q1. Check  $P(A)*P(B)=0.3*0.4=0.12$  which equals  $P(A \text{ and } B)$ . Yes, they are independent.

Q2.  $P(D|+)=\frac{0.95*0.01}{(0.95*0.01+0.05*0.99)}=0.161$ .

Q3.  $SE=12/6=2$ .  $Z=(42-40)/2=1$ .  $P(Z>1)=0.1587$ .

Q4.  $SE = 10/\sqrt{100} = 1$ .