Spring FINAL Practice Test Financial Functions

ID# _____ Period _____

1. *RETIREMENT SAVINGS PLANNING:* You are thirty-five years old and currently have no savings or debt. You plan to retire at age 65 years when you will collect social security payments. Once you retire, you plan to live another 25 years. **1A. DETERMINE TARGET RETIREMENT INCOME: When you retire, you want annual income of $20,000 in today's dollars to supplement your social security checks. You anticipate that the overall rate of inflation will be 3% per year. Convert a current value of $20,000 in today's dollars to an inflation-adjusted value when you reach the age of 65 years?**	**1A.**
1B. DETERMINE TARGET RETIREMENT SAVINGS: Now consider you have reached age 65 years. How much savings is required to support the inflation-adjusted target income per year calculated in #1A for your anticipated period of retirement? Assume the account earns an annual rate of return of 6%.	**1B.**
1C. DETERMINE REQUIRED ANNUAL SAVINGS: Beginning today, how much must be saved each year to attain your target retirement savings goal determined in #1B?	**1C.**
2. *FIXED BENEFIT EMPLOYEE RETIREMENT COSTS:* Your business is assessing the cost of its fixed benefit retirement program. A typical employee earns a salary of $60,000 per year when they retire at 65 years old, and will have worked 35 years at the company at that time. The current program pays employees 65% of their annual salary from the time they retire until they pass away. There are no cost-of-living adjustments, so the annual retirement payments do not change during the remainder of the employee's life. Actuarial tables show that the typical employee lives to the age of 80 years. The company retirement accounts earn an annual return of 6%. **2A. How much will the employee be paid each year at retirement?**	**2A.**
2B. When the typical employee retires, how much must the company have saved to pay them the annual payment calculated in #2A for the remainder of their life?	**2B.**
2C. How much must the company deposit every year during the employee's 35 years of employment in order to attain the savings target calculated in #2C?	**2C.**
2D. To reduce employee costs, the company decides to replace its fixed benefit program with a defined contribution program. How much can the employer contribute to the typical employee's retirement account if the company wants to cut its annual employee retirement benefit costs by $1,500 per employee.	**2D.**
2 BONUS: How much does the employer need to save for employees who work 35 years, but can retire at the age of 60 years because they began working at the company when they were 25 years old?	**2 BONUS.**

3. *FORECASTING & VALUATION:* Provide an income statement for Year 3 given the information below.

- **18-unit apartment building with twelve one-bedroom units, and six two-bedroom units.**
- **Uncertainty regarding the first year monthly rents requires us to consider the following discrete random variable distributions.**

X = One bedroom rent	$750	$900	$1,000
P (X)	20%	50%	30%

Y = Two bedroom rent	$1,250	$1,400
P (Y)	40%	60%

- **Rents will increase 6% each year.**
- **A laundry room generates annual income of $750 for year one. This income is expected to increase at an annual rate of 4%.**
- **Estimate vacancy and collection loss at 5% of gross income.**
- **Annual expenses for the first year are listed below. A review of historical trends provided the following assumptions for inflation by category.**

	Year One Expense Projection	Annual Rate of Increase
Real Estate Taxes	**$15,000**	**2% per year**
Insurance	**$5,000**	**6% per year**
Utilities	**$22,000**	**7% per year**
Maintenance	**$6,000**	**5% per year**
Reserves	**$4,000**	**4% per year**

For the income statement above, consider the outcome where one-bedroom units rent for $1,000 per month, and two-bedroom units rent for $1,400 per month.

REPORT ONLY THE YEAR 4 INCOME STATEMENT ON THE ANSWER SHEET PROVIDED.

4. – 5. In Question #3, you calculated annual net incomes for years one, two, three and four assuming the one-bedroom units rent for $1,000 per month, and two-bedroom units rent for $1,400 per month. Assume the property will be sold for $1,200,000 at the end of Year Four.

4. Find the net present value of this investment if you want to earn an 8.0% annual rate of return.	**4.**
5. What is the internal rate of return if you pay $1,450,000 for this investment today? (Report to nearest tenth %)	**5.** **(Report to nearest tenth %)**
BONUS QUESTION: Using the information in question #10, find the <u>Expected Value</u> for this property. Summarize the value of the outcomes and the probabilities of each outcome on the back of this test. Place the expected value in the answer box to the right. **(MR. NELSON WILL CHECK YOUR SPREADSHEET BEFORE YOU CLOSE EXCEL.)**	**BONUS:** **Expected Value =** _____

6. You qualify for a home loan of $390,000 at an annual interest rate of 4.4% and a loan term of 30 years. What will be your monthly payment?	**1.**
7. Your client has been offered two options for the settlement of a dispute with his insurance company. You must help him to choose the option with the highest present value. **Option One: $18,000 per year for 16 years** **Option Two: $400,000 paid in one lump sum in 12 years.** **Assume an annual rate of return of 6%.** **7A. Find the Present Value of Option One.** **7B. Find the Present Value of Option Two.** **7C. Which option should the client choose?**	**2A.** **2B.** **2C.**
8. You are currently thirty years old and have set a savings goal of $1,200,000 for when you reach 75 years old. You presently have savings of $6,000 and no debt. How much must be saved each year to attain your savings goal of $1,200,000? Assume you can earn an annual return of 7% on your savings.	**3.**
9. You and your spouse earn $110,000 per year, and want to spend only 33% of your income on a mortgage payment. You qualify for a 15-year loan at an annual interest rate of 4.5%. Find how much you can borrow with these limitations.	**4.**
10. You are twenty-five years old and currently have no savings or debt. You plan to retire at age 75 years. If you start to save $4,500 per year at age 25, how much will have been saved at retirement? Assume you will earn a 6% return on your savings.	**5.**
11. Five hundred strip bonds with a face value of $50,000 mature in 10 years. How much should an investor pay for this investment if they desire a 5.5% annual return?	**6.**
12. Two hundred bonds with a face value of $20,000 pay $800 per year and mature in 8 years. How much should an investor pay for this investment if they desire a 3.5% annual return?	**7.**
13. You are thirty years old and currently have no savings. You have one credit card debt of $3,000. You plan to retire at age 70 years. If you start to save $4,800 per year starting at age 30, how much will have been saved at retirement? Assume you will earn a 7% return on your savings.	**8.**
14. You are currently twenty-five years old and have set a savings goal of $1,400,000 for when you reach 80 years old. You presently have no savings or debt. How much must be saved each year to attain your savings goal of $1,400,000? Assume you can earn an annual return of 7% on your savings.	**9.**

#3 INCOME STATEMENT Year Four

_____

One Bedroom Units _____

Two Bedroom Units _____

Laundry Room _____

Total _____

Vacancy & Collection Loss _____

_____ _____

_____

Real Estate Taxes _____

Insurance _____

Utilities _____

Maintenance _____

Other/Reserves _____

Total _____

_____ _____