

Spring Midterm #1 Financial Functions

Name _____ Period _____

<p>1. RETIREMENT SAVINGS PLANNING: You are thirty 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 30 years.</p> <p>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 4% 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?</p> <p>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%.</p> <p>1C. DETERMINE REQUIRED ANNUAL SAVINGS: Beginning today, how much must be saved each year to attain your target retirement savings goal determined in #1B?</p>	<p>1A.</p> <hr/> <p>1B.</p> <hr/> <p>1C.</p>
<p>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 \$80,000 per year when they retire at 68 years old, and will have worked 35 years at the company at that time. The current program pays employees 70% 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 81 years. The company retirement accounts earn an annual return of 7%.</p> <p>2A. How much will the employee be paid each year at retirement?</p> <p>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?</p> <p>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?</p> <p>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 \$2,000 per employee.</p> <p>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?</p>	<p>2A.</p> <hr/> <p>2B.</p> <hr/> <p>2C.</p> <hr/> <p>2D.</p> <hr/> <p>2 BONUS.</p>

<p>3. You qualify for a home loan of \$500,000 at an annual interest rate of 3.5% and a loan term of 30 years. What will be your monthly payment?</p>	3.																		
<p>4. Three hundred bonds with a face value of \$30,000 pay \$1,500 per year and mature in 10 years. How much should an investor pay for this investment if they desire a 4% annual return?</p>	4.																		
<p>5. You and your spouse earn \$75,000 per year, and want to spend only 35% of your income on a mortgage payment. You qualify for a 30-year loan at an annual rate of 3.5%. Find how much you can borrow with these limitations.</p>	5.																		
<p>6. - 7. An investment is projected to earn the following net operating incomes.</p> <table border="1"> <thead> <tr> <th>Year</th> <th>Net Operating Income</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>\$90,000</td> </tr> <tr> <td>2</td> <td>\$97,000</td> </tr> <tr> <td>3</td> <td>\$106,000</td> </tr> <tr> <td>4</td> <td>\$109,000</td> </tr> </tbody> </table> <p>At the end of the four-year holding period, the investment is sold for net proceeds of \$1,300,000.</p> <p>6. Find the net present value of this investment if you want to earn a 7% rate of return.</p> <p>7. What is the rate of return if you pay \$1,200,000 for this investment?</p>	Year	Net Operating Income	1	\$90,000	2	\$97,000	3	\$106,000	4	\$109,000	<p>6.</p> <hr/> <p>7.</p> <p>(Report to nearest tenth %)</p>								
Year	Net Operating Income																		
1	\$90,000																		
2	\$97,000																		
3	\$106,000																		
4	\$109,000																		
<p>8. Provide an income statement estimating Year 4 Net Operating Income for this property.</p> <ul style="list-style-type: none"> • 12-unit apartment building with six two-bedroom units, and six one-bedroom units. • In year one, each two-bedroom unit will rent for \$1,400 per month, and each one-bedroom unit will rent for \$950 per month. • All rents will increase 5% annually for the next four years. • A laundry room generates annual income of \$750 for year one. This income is expected to increase at an annual rate of 8%. • Estimate vacancy and collection loss at 5% of annual gross income. • Annual expenses for the first year are listed below. A review of historical trends provided the following assumptions for inflation by category. <table border="1"> <thead> <tr> <th></th> <th>Year One Expense Projection</th> <th>Annual Rate of Increase</th> </tr> </thead> <tbody> <tr> <td>Real Estate Taxes</td> <td>\$10,000</td> <td>2% per year</td> </tr> <tr> <td>Insurance</td> <td>\$3,000</td> <td>6% per year</td> </tr> <tr> <td>Utilities</td> <td>\$24,000</td> <td>7% per year</td> </tr> <tr> <td>Maintenance</td> <td>\$9,000</td> <td>6% per year</td> </tr> <tr> <td>Reserves/Other</td> <td>\$3,000</td> <td>4% per year</td> </tr> </tbody> </table>			Year One Expense Projection	Annual Rate of Increase	Real Estate Taxes	\$10,000	2% per year	Insurance	\$3,000	6% per year	Utilities	\$24,000	7% per year	Maintenance	\$9,000	6% per year	Reserves/Other	\$3,000	4% per year
	Year One Expense Projection	Annual Rate of Increase																	
Real Estate Taxes	\$10,000	2% per year																	
Insurance	\$3,000	6% per year																	
Utilities	\$24,000	7% per year																	
Maintenance	\$9,000	6% per year																	
Reserves/Other	\$3,000	4% per year																	

8. 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
