Susan robinson essay sample

Finance, Investment

1. Susan Robinson is planning for her retirement. She is 30 years old today and would like to have $600, 000 when she turns 55. She estimates that she will be able to earn a 9 percent rate of return on her retirement investments over time: she wants to set aside a constant amount of money every year (at the end of the year) to help achieve her objective. How much money must Robinson invest at the end of each of the next 25 years to realize her goal of $600, 000 at the end of that time?

$600, 000 = PMT(FVIFA. 09, 25) = PMT(84. 701)

PMT = $7, 083. 74

2. Two investment opportunities are open to you: Investment 1 and Investment 2. Each has an initial cost of $10, 000. Assuming that you desire a 10 percent return on your initial investment, compute the net present value of the two alternatives and evaluate their relative attractiveness: INVESTMENT 1 INVESTMENT 2 CASH FLOWS YEAR CASH FLOW YEAR 5, 000 1 8, 000 1 6, 000 2 7, 000 2 7, 000 ; 3 6, 000 3 8, 000 4 5, 000 4

NPV1 = -$10, 000 + $5, 000(0. 909) + $6, 000(0. 826) + $7, 000(0. 751) + $8, 000(0. 683) = $10, 222

NPV2 = -$10, 000 + $8, 000(0. 909) + $7, 000(0. 826) + $6, 000(0. 751) + $5, 000(0. 683) = $10, 975

This is the preferred alternative.

3. Your great-uncle Claude is 82 years old. Over the years, he has accumulated savings of $80, 000. He estimates that he will live another 10 years at the most and wants to spend his savings by then. (If he lives longer

than that, he figures you will be happy to take care of him) Uncle Claude places his $80, 000 into an account earning 10 percent annually and sets it up in such a way that he will be making 10 equal annual withdrawals-the first one occurring one year from now- such that his account balance will be zero at the end of 10 years. How much will he be able to withdraw each year?

$PVAN0 = \$80, 000 = PMT(PVIFA. 10, 10) = PMT(6. 145)$

$PMT = \$13, 018. 71$

(Calculator solution = $13, 019. 63)

4. You deposit $4, 500 per year at the end of the next 25 years into an account that pays 10 percent compounded annually. How much could you withdraw at the end of each of the 20 years following your last deposit?

(The 25th and last deposit is made at the beginning of the 20- year period. The first withdrawal is made at the end of the first year in the 20-year period.)

$FVAN25 = \$4, 500(FVIFA. 10, 25) = \$4, 500(98. 347)$

$FVAN25 = \$442, 561. 50$ (This is the amount in the account at the end of 25 years, & this amount represents the present value of a 20 year annuity)

$PVAN0 = \$442, 561. 50 = PMT(PVIFA. 10, 20) = PMT(8. 514)$

$PMT = \$51, 980. 44$

(Calculator solution = $51, 983)