

# Case 7: better late than never

Life



Case 7: Its better late than never! 1. What was Ryan's starting salary? How much could he have contributed to the voluntary savings plan in his first year of employment? RATE NPR FV PV YEARCONTRIBUTION TO SAVINGS

PLAN . 05170, 00066, 6675th\$7, 333 . 05270, 00063, 4924th\$6, 984 .

05370, 00060, 4693rd\$6, 651 . 05470, 00057, 8492nd\$6, 363 . 05570,

00054, 8471st\$6, 033 Ryan's first year salary at this company was \$54, 847

and he could have contributed \$6, 033 in his first year of employment. These were found by using the present value formula for all five years. 2.

Had Ryan taken advantage of the company's voluntary retirement plan up to the maximum, every year for the past five years, how much money would he currently have accumulated in his retirement account, assuming a nominal rate of return of 7%? How much more would his investment value have been worth had he opted for a higher risk alternative (i. e. 100% in common stocks), which was expected to yield an average compound rate of return of 12% (A. P. R. )? YEAR SALARIES CONTRIBUTION CONTRIBUTION TO SAVINGS

PLAN 5th66, 667x11% =\$6, 033 4th63, 492x11%=\$6, 363 3rd60,

469x11%=\$6, 651 2nd57, 849x11%=\$6, 984 1st54, 847x11%=\$7, 333

Total\$33, 364 FV Formula

Rate: . 07 NPER: 5 PMT: 0 PV: -33364 Current accumulated in retirement account= \$46, 794 \$46, 794- \$33, 364= \$13, 430 FV Formula Rate: . 12

NPER: 5 PMT: 0 PV: -33364 Net worth of average retirement account= \$58,

798 If Ryan had take advantage of the retirement plan, he would currently

have accumulated \$13, 430 assuming at rate of return of 7%. Assuming a

rate of 12%, he would have been worth \$58, 798. 4. How much would Ryan

have to save each month, starting from the end of the next month, in order

to accumulate enough money for his wedding expenses, assuming that his investment fund is expected to yield a rate of return of 7% per year?

Wedding Expense \$15,000  $\times 1.04 = \$15,600$  PMT Formula Rate: .07/12  
Nper: 12 PV: 0 FV: -15600 How much needs to be saved = \$1,258.82

Monthly 5. If Ryan starts saving immediately for the 20% down payment on his house, how much additional money will he have to save each month?

Assume an investment rate of return of 7% per year.  $250,000 \times 1.04 = 304,163$   
 $304163 \times .20 = 60,832$  Rate: .07/12 Nper: 5 PV: 0 FV: -60832 How much

needs to be saved = \$844 Monthly 6. If Ryan wants to have a million dollars (in terms of today's dollars) when he retires at age 65, how much should he save in equal monthly deposits from the end of the next month?

Ignore the cost of the wedding and the down payment on the house. Assume his savings earn a rate of 7% per year (A. P. R. ).  $PV = 1,000,000 \times 1.04$  (.

$04/12 + 1$ ) 38 years till retirement  $FV = 4,438,813$  38 Years  $\times 12$  Months =  
456 Months  $iy = 7$   $FV = 4,438,000$   $Cy = 12$   $Py = 12$  Monthly Payments = \$1,

963. 65 7. If Ryan saves up the million dollars (in terms of today's dollars) by the time of his retirement at age 65, how much can he withdraw each month

(beginning one month after his retirement) in equal dollar amounts, if he figures he will live up to the age of 85 years?

Assume that his investment fund yields a nominal rate of return of 7% per year. FV Formula PV: 4438000 n: 240 Months iy: 7 Cy: 12 Py: 12 Withdraw

amount each month: 34,414 for 20 Years 8. After preparing a detailed budget, Ryan estimates that the maximum he will be able to save for retirement is \$300 per month, for the first five years. After that he is

confident that he will be able to increase the monthly saving to \$500 per

month until retirement. If the account provides a nominal annual return of 7%, how much money will Ryan be able to withdraw per month during his retirement phase?

PV Formula Rate: .07 Nper: 5 PMT 0 PV: 21,478,300  $\times 1.01^{396} = 200,289$

Rate: .07 Nper: 33 PMT: 0 PV 972,321 / 20 Years  $\times 7/12 + 1 = 7,600$  Monthly

9. What is the lesson to be learned from this case? Explain. I have learned that you must begin saving for a retirement plan early because by the time you retire your investment can increase tremendously, allowing a future for the rest of your family as well as to be able to live comfortably while retired.