FIN 303
Professor Dow

TVM Problem Set 1

For these problems, do not use the TVM keys on your calculator

1) You are investing $100 today. How much will you have in 8 years if you earn 6% per year?

2) You are investing $80,000 today. How much will you have in 20 years if you earn 5% per year?

3) What is the present value of $10,000 paid 8 years from now discounting at a rate of 12%?

4) If you want to have $40,000 6 years from now, how much must you invest today if you expect a return of 8%?

5) You invest $10,000 today and end up with $14,000 two years from now? What was your annual return?

6) You have $25,000 to invest now and want to have $60,000 sometime in the future. If you earn 8% on your investments, how long will this take?

Answers:

1) 100*(1.06)^8 = 159.38

2) 80,000*(1.05)^20 = 212,263.82

3) 10,000/(1.12)^8 = 4,038.83

4) X*(1.08)^6 = 40,000, or 40,000/(1.08)^6 = 25,206.79

5) 10,000*(1+r)^2 = 14,000, or (14,000/10,000)^0.5-1 = 0.1832

6) 25,000*(1.08)^n = 60,000

n*ln(1.08) = ln(60,000/25,000)

ln(60,000/25,000)/ln(1.08) = 11.3755

about 11 and 1/3 years, or 12 years if only using full years.