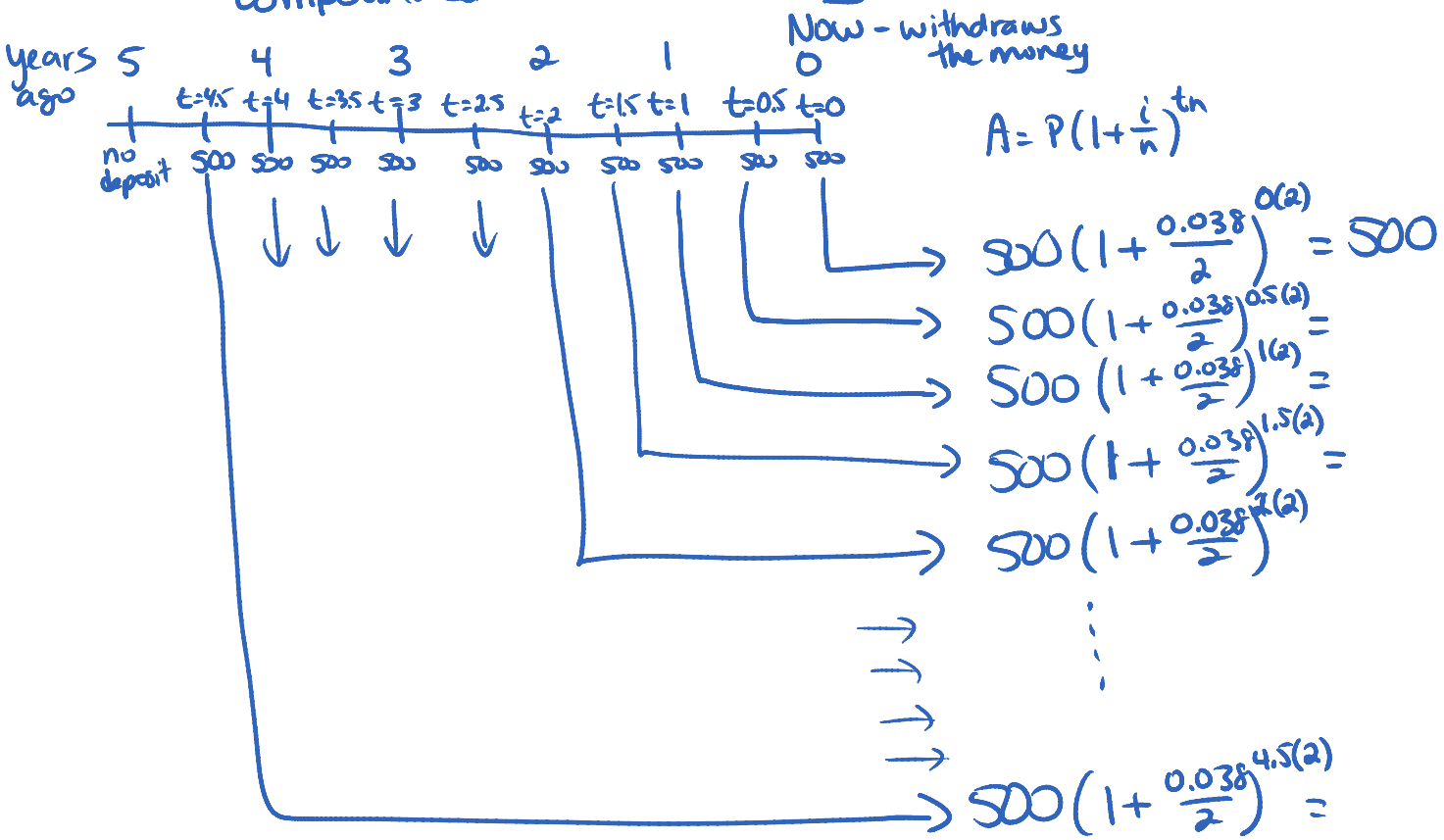
1.5 Regularly Investing

Thursday, February 07, 2013
10:04 AM

So far we've dealt with lump sum investments, but financial advisors recommend making regular deposits instead.

See pg 47 Ex 1

5 years
$500 every 6 months
$i = 0.038$
compounded semi-annually $n = 2$

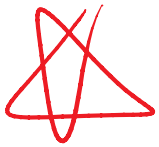


Our total : $5449.90
after 5 years of deposits and interest

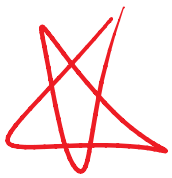
Interest = $5449.90 − 10($500) = $449.90

Interest earned = $5449.90 − 10 ($500 deposits) = $449.90

Free online Financial Calculator:



mycalculators.com



Practice pg 55 #4, 5

(write out the calculations for #4)
(use online calculator for the rest)

1.6 Investment Portfolios

Tuesday, February 12, 2013
10:56 AM

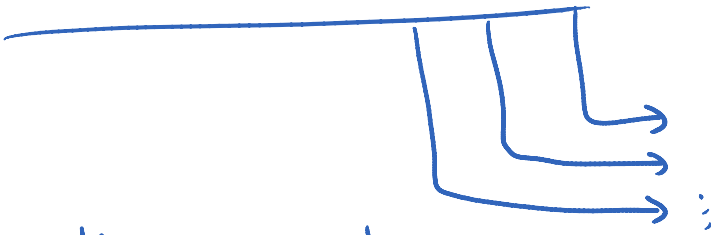
Same calculations:

① Simple Interest: $A = P + Prt$ (P: principal invested; Prt: interest earned; A: future value)

② Compound Interest: $A = P\left(1 + \frac{i}{n}\right)^{tn}$ (tn: # of years; n: # of compounding periods in a year)

③ Doubling time: $\frac{72}{\text{interest rate (in \%)}}$

④ Regular Payments:



Most people have more than one type of investment; they have a portfolio that has a mixture of investments.

Ex In Jean-Baptiste's portfolio he has the following investments, all available this month:

- A simple interest GIC earning 9% that his parents contributed $2000 to when he was born 31 years ago.
- A 3.2% compounded monthly bond that he deposited a $5000 inheritance into

10 years ago.

- An acct he has been making $1000 annual deposits into. His first deposit was made 4 years ago (for a total of $5000 deposits) The acct earns 4% and compounds quarterly.

a) How much does J.B. have for a down payment on a house if he uses all his investments?

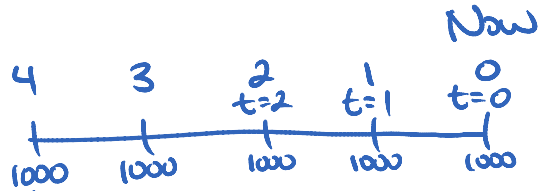
Simple int. GIC

$$A = P + Prt$$
$$= 2000 + 2000(0.09)(31)$$
$$= \$7580$$

compounding bond

$$A = P\left(1 + \frac{i}{n}\right)^{tn}$$
$$= 5000\left(1 + \frac{0.032}{12}\right)^{10(12)}$$
$$= \$6882.71$$

annual deposits years ago



$$A = P\left(1 + \frac{i}{n}\right)^{tn}$$

$$= 1000\left(1 + \frac{0.04}{4}\right)^{0(4)} = 1000$$
$$= 1000\left(1 + \frac{0.04}{4}\right)^{1(4)} = 1040.604$$
$$= 1000\left(1 + \frac{0.04}{4}\right)^{2(4)} = 1082.8567$$
$$= 1000\left(1 + \frac{0.04}{4}\right)^{3(4)} = 1126.825$$
$$= 1000\left(1 + \frac{0.04}{4}\right)^{4(4)} = 1172.5786$$

T Ln. $5422.86

Total: $5422.86

$ for downpayment:

$7580
6882.71
+ 5422.86
$19,885.57

b) What was the overall rate of return?

$$\frac{A}{P} = \frac{\$19,885.57}{2000 + 5000 + 5000} = \frac{19,885.57}{12,000}$$

$$= 1.65713$$

$$\rightarrow 65.7\%$$

Practice: pg 65 #3, 9 ← mycalculators.com
↑ do by hand

Self Test pg 68 #1, 2