Lesson Warm-up  Date: _____

1. If a bank pays you interest 4 mes per year,
how many mes will the bank pay you interest in 10 years?
Answer: 40

2. Convert to a decimal:
a) 8% b) 12.5% c) 3 ¼ %

$= 0.08$ $= 0.125$ $= 3.25\%$ $= 0.0325$

3. Using the formula $A = P(1+i)^n$, find the amount an investment of \$5000 grows to in 3 years, if interest is 10% per year compounded semi-annually.

$A = ?$ $P = 5000$ $i = \frac{0.10}{2}$ $n = 3 \times 2 = 6$

$A = 5000\left(1 + \frac{0.10}{2}\right)^6$

$\doteq 6700.478$

$\doteq \$6700.48$

4. Homework Queson: p. 440 #7

6.3%/a comp. monthly 25 → 35 wants \$50 000 ∴ 10 years

$A = 50\,000$ $P = ?$ $i = \frac{0.063}{12}$ $n = 10 \times 12 = 120$

$A = P(1+i)^n$

$50\,000 = P\left(1 + \frac{0.063}{12}\right)^{120}$

$\frac{50000}{\left(1 + \frac{0.063}{12}\right)^{120}} = P$

$P \doteq 26\,673.511$

$\doteq \$26\,673.51$

Before we begin, are there any questions from last day's work?

Today's Learning Goal(s):

By the end of the class, I will be able to:

a) compare the effects of changing the conditions on investments, for example, the interest rate and/or compounding period.
This means we want to calculate the future amounts, and determine which is the better investment. (earns more)

MBF3CI **The Effects of Changing the Condions on Investments and Loans**

Date: May 29/17

Ex. 1 Suppose you invest $1000. You have narrowed down to two banks that you will deal with "Bank A" will give you 5% per year compounded annually for 4 years, and "Bank B" will pay you 5% per year compounded semi-annually for 4 years. Assuming they provide the same level of customer service, which bank should you invest with? Explain.

Bank A

2 A= ?

P=1000

i= $\frac{0.05}{1}$

n= 4 x 1 = 4

1 $A = P(1+i)^n$

$A = 1000\left(1+\frac{0.05}{1}\right)^4$

$\doteq 1215.506$

$\doteq \$1215.51$

Bank B

A= ?

P= 1000

i= $\frac{0.05}{2}$

n= 4 x 2 = 8

$A = P(1+i)^n$

$A = 1000\left(1+\frac{0.05}{2}\right)^8$

$\doteq 1218.402$

$\doteq \$1218.40$

$\therefore$ invest with "Bank B" to earn an extra $2.89

Ex. 2 Your friend told you about "Bank C" that will pay you 4.9% per year compounded monthl for 4 years. Assuming they provide the same level of customer service, should you invest your money in "Bank B" (from **Ex. 1**) or "Bank C"? Explain.

Bank C

2 A= ?

P= 1000

i= $\frac{0.049}{12}$

n= 4 x 12 = 48

1 $A = P(1+i)^n$

$A = 1000\left(1+\frac{0.049}{12}\right)^{48}$

$\doteq 1216.041$

$\doteq \$1216.04$

$\therefore$ "Bank B" is still the best investment of these 3 choices.

However, you would have $0.53 more than Bank A, but with a ***lower*** interest rate).

Entertainment: pp. 450-452 #4, 6, 7, 11