Are there any Homework Questions you would like to see on the board?

pp. 476-477 # 1, 2, 8, 10

Today's Learning Goal(s):

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

a) Use the TVM Solver to solve problems involving future value, present value, number of payments, and interest rate.

Warm-up/Simple Interest Review

Anthony invests $980 at 9%/a simple interest.
Determine the total amount of his investment after 10 months.

Recall: $I = Prt$

$I = ?$

$P = 980$

$r = 0.09$

$t = \frac{10}{12}$

$I = Prt$

$= 980(0.09)\left(\frac{10}{12}\right)$

$= \$73.50$

$A = P + I$

$= 980 + 73.50$

$= 1053.50$

$1053.50

after 10 months, the total amount of his investment is $\$1053.50$.

MCF 3MI

8.4 Compound Interest: Solving Financial Problems (Using the TVM Solver)

$A = P(1+i)^n$ or $\frac{A}{(1+i)^n} = P$

Date: Jan. 8/20

Ex. 1: Aisha invests $725 at 5.2%/*a* interest compounded quarterly.
Determine the total amount in Aisha's account at the end of 6 years.

$A = ?$

$P = 725$

$i = \frac{0.052}{4}$

$n = 6 \times 4 = 24$

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

$= 725\left(1 + \frac{0.052}{4}\right)^{24}$

$\doteq 988.472$

$988.47

Aisha will have $988.47 in the account at the end of 6 years.

Now, using your Chromebook and the weblink in our Google classroom, we can check our work using a TVM Calculator.

For the software to work properly, PV (present value) must be negative.
"Periods" is "*n*", the number of compounding periods.

TVM Calculator http://www.fncalculator.com/t

TVM Calculator

Mode	End / Beginning	
Present Value	−725	PV
Payment		PMT
Future Value		FV
Annual Rate (%)	5.2	Rate
Periods	24	Periods
Compounding	Quarterly	

The "default" is monthly, and must be changed.

Ex. 2: Bhavraj invested money in a savings bond, earning 6.5%/*a* interest, compounded semi-annually. If after 5 years, he got $5000 back, how much did Bhavraj initially invest?

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

$A = 5000$

$P = ?$ $i = \frac{0.065}{2}$

$n = 5 \times 2 = 10$

$5000 = P(1+\frac{0.065}{2})^{10}$

$\frac{5000}{(1+\frac{0.065}{2})^{10}} = P$

$P = 3631.360$

$= \$3631.36$

$3631.36

TVM Calculator

Mode	End / Beginning	
Present Value		PV
Payment		PMT
Future Value	5000	FV
Annual Rate (%)	6.5	Rate
Periods	10	Periods
Compounding	semi-annually	

The "default" is monthly, and must be changed.

Bhavraj invested $3631.36 5 years ago.

Ex. 3: Kat's friend lent her some money with an interest rate of 3.6%/*a*, compounded monthly. After 2 years, Kat paid $500.76 back to her friend. How much did Kat initially borrow from her friend?

$A = 500.76$

$P = ?$

$i = \frac{0.036}{12}$

$n = 2 \times 12 = 24$

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

$500.76 = P(1+\frac{0.036}{12})^{24}$

$\frac{500.76}{(1+\frac{0.036}{12})^{24}} = P$

$P = 466.022$

$=$

$466.02

TVM Calculator

Mode	End / Beginning	
Present Value		PV
Payment		PMT
Future Value	500.76	FV
Annual Rate (%)	3.6	Rate
Periods	24	Periods
Compounding	monthly	

Kat initially borrowed $466.02 from her friend.

Revisit Today's Learning Goals

Today's Homework:

pp. 486-488 #1 – 3, 6, 7, 10, 14
READ pp. 489-490
(Mid-Chapter Review) pp. 491-492 # 1, 2, 4 – 14

Continue completing your UNIT ASSIGNMENT!!