NAME : **Solutions**

SHOW STEPS TO RECEIVE CREDIT!!

$$A = P(1 + rt) \qquad\qquad A = P(1+i)^n \qquad\qquad i = \frac{r}{m}$$

1) A check for $5,099.50 was used to retire (pay-off) a 7-month loan of $5,000.

   A.   How much interest was paid?

   5,099.50 – 5,000 = $99.50

   B.   What annual rate of interest was charged? Recall   I = Prt

   I = Prt ➔ 99.50 = 5000 r (7/12) ➔ r = 99.50/(5000(7/12)) = 0.034 = 3.4%

   C.   How much would the pay-off amount be if the annual interest rate was 11%

   A = P(1 + rt) = 5000(1 + .11(7/12)) = $5320.83

You may use the TVM solver or the compound interest formula. Either show your TVM solver entries or show how you use the formula.

2.   Your grandmother wants to invest enough money now in an account that earns 4.5% compounded semiannually, so that she will have $8,000 to take a trip in <u>seven years.</u> How much money should she invest?
        She will be so proud of you for learning this in school!!

N = 7*2 = 14
I% = 4.5
PV = 0   Alpha Enter ➔ - 5858.73
PMT = 0
FV = 8000
P/Y = 2
C/Y = 2

$A = P(1 + i)^n$ **P = A/(1 + i)^n = 8,000/(1 + .045/2)^{14} = 5858.73**

P = _____?_____

i = 0.045/2

n =   7 *2 =14

Write answer here: $5858.73

3. Your grandmother is so impressed with your help that she gives you a check for $10,000. You know it will make her happy if you save it, so you invest the money into an account that earns 0.3% compounded quarterly. How much money will you have in <u>6 years</u>?

N = **6*4=24**	
I% = **0.3**	
PV = **-10000**	
PMT = **0**	
FV = **10181.56**	
P/Y = **4**	
C/Y = **4**	

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

P = _____**10000**_   **$A = P(1 + i)^n = 10,000(1 + .003/4)^{24} = 10181.56$**

$i = 0.03 / 4$
$n =$ 6*4 = 24

<u>**Write answer here:**</u> $**10181.56**

4. Your grandmother won big at Bingo! She wants to take her $1550 in winnings and invest it in an account that pays 1.3% compounded monthly. How much will she have in <u>Eleven</u> years?

Use the TVM solver or the formula – just fill in the table or the blanks!!

N = **11*12 = 132**	
I% = **1.3**	
PV = **-1550**	
PMT = **0**	
FV = **1788.14**	
P/Y = **12**	
C/Y = **12**	

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

P = $1550

$i = 0.013 / 12$

$n = 11 * 12 = 132$

$A = P(1 + i)^n = 1550(1 + .013/12)^{132} = 1788.14$

<u>**Write answer here:**</u> $**1788.14**