Name_____ Date_____ Period_____

Unit 6 Review
If you use the TVM solver make sure you write down what you put into the calc

1. Richard is putting money into savings account. He is putting 6,000 into a savings account with a 5.5% interest rate compounded monthly for 40 years. How much will he have in 40 years?

$N=480$ PMT=0
$I=5.5$ (FV)
$PV=6000$ P/Y 12 C/Y 12

$53,878.59

2. Alfred wants to have 500,000 in 50 years. How much will he need to put in if he has a CD with 3.2% interest compounded monthly?

$N=600$ PMT=0
$I=3.2$ FV=500000
$PV=?$ P/Y C/Y 12

$101,163.46

3. What does TOTAL COST mean?

THE TOTAL AMOUNT YOU HAVE EVER SPENT ON A LOAN

4. Selina and Bruce are buying a house for 175,000. They can either have a 15 year mortgage or a 30 year mortgage. The interest rate that their bank is giving them is 4.5%

a. What would the monthly payment be on a 15 year mortgage?

$N=180$ PV=0
$I=4.5$ P/Y 12 C/Y
$PV=175,000$
(PMT)

$1338.74

b. What would be the monthly payment on a 30 year mortgage?

$N=360$

Same as above

~~886.70~~ 886.70
~~922.71~~

c. What is the TOTAL COST of the 15 year mortgage?

$1338.74 \times 180 =$

~~240073.20~~
$240,973.20

d. What is the TOTAL COST of the 30 year mortgage?

~~~~ = ~~~~
~~~~ $360 \times 886.70 = $319,212$

5. Pamela has a lot of credit card debt. Below are her current balances on her credit cards. Calculate the minimum payment for each if she wants to have them paid off in 2 years

$N=24$

~Chase $10,562 at 29.99 % APR 590.50

~Visa $3,401 at 23.99% APR 179.80

~MasterCard $12,209 at 11.5 % APR 571.87

~BP gas card $1,997 at 20.99% APR 102.61

~Discover $5,355 at 18.99% APR 269.91

The previous balance on Harvey's credit card is $4,321. He spent $534 this month and paid off $243.

a. What is his end of month balance?

$$4321 + 534 - 243 = \$4612$$

b. His APR is 29.99%. What is his monthly periodic rate?

$$\frac{29.99\%}{12} = 2.5\%$$

c. What is his finance charge for this month?

$$4612(.025) = \$115.30$$

d. What is his new balance? (end of the month balance + the finance charge)

$$4612 + 115.30 = \$4727.30$$

e. His minimum payment is 3.7% of his end of month balance (without finance charge). What is his minimum payment?

$$(.037)4612 = \$170.64$$

f. If he only pays the minimum payment and does not spend anymore how many months (or years) will it take him to pay off his credit card?

N=? PMT= -170.64   47.75 months or
I = 24.99 PV=0
PV = 4727.30 $\frac{P+}{cy}$ = 12   3.98 years

g. How much would he need to pay per month to pay off his credit card in 2 years?

N=24 PMT=?
I= 24.99 FV=0 $264.29
PV=4727.30 $\frac{P+}{cy}$ =0

h. Harvey's annual salary is 21,000. His taxes are 22.65% and his total monthly expenses are $950. If he chooses to pay the amount from part g, how much money will he have left over each month for food and personal things? What options would you give Harvey to be able to have more money at the end of the month?

21000 ÷ 12 = 1750(.2265) = 396.38   1750 - 396.38 = 1353.62 (post-tax salary)

1353.62 - 950 - 170.64 = 232.98 (left over!)
  expenses Credit card   GET A ROOMATE!

Viktor is buying a new car. He is going to buy a new Cadillac Escalade for $61,598. He has two options. If he buys the car he must pay a 10% down payment over 3 years at a 4.9% interest rate. What would be his monthly payment if he chooses to buy the car?

61,598(.10) = $6,159.80 Down payment   61,598
                                            -6159.80
N=36 FV=0   55,438.20 PV
I=4.9 $\frac{P+}{cy}$ 12 $1659.04
PV=55,438.20
PMT ?

What is the total cost of the car if he assumes he can sell back the car for $28,874?

1659.04 × 36 + 6159.80 = $65,885.24 - 28,874 = $37,011.24

The other option is to lease the car. If he leases the car the monthly payment is $709 for 3 years with $1,999 due at signing. What is the total cost of the car if he leases it?

709 × 36 + 1999 $27,523

Which option (Buy or Lease) would you pick and why?

Unit 6 Quiz Review

Peyton has just been offered two jobs
- The first job is an account manager job with an annual salary of $48,500
- The second job is a sales associate job which makes an hourly wage of $26.50. (Assume the sales associate works an average 40 hour work week)

(Show ALL WORK!!)

Account Manager	Sales Associate
1. Annual Salary $48,500	$26.50 × 40 = 1060 per week × 52 Annual Salary $55,120

Account Manager	Sales Associate
2. 48500 ÷ 12 Pre-Tax Monthly Salary $4041.67	55120 ÷ 12 Pre-Tax Monthly Salary $4593.33

Each job requires taxes to be taken out. Assume all taxes come to 32.65%

Account Manager	Sales Associate
3. 4041.67(.3265) = 1319.61 4041.67 − 1319.61 Post-Tax Monthly Salary $2722.06	4593.33(.3265) = 1499.72 4593.33 − 1499.72 Post-Tax Monthly Salary $3093.61

Peyton knows he is going to need 10 vacation days and 3 sick days. He also wants Health insurance, Life insurance and to pay into his retirement plan
- The associate manager job gives him 10 vacation days and 5 sick days. Health insurance is $120 a month, life insurance is $45 a month and his retirement is 3.5% of his post-tax monthly salary
- The sales associate job gives 5 vacation days and no sick days. Health Insurance is $140 a month, life insurance is $40, and retirement is $110 each month.

4. Account Manager	Sales Associate

Vacation ⎫
         ⎬ not needed!
Sick Days ⎭
	Vacation ⎫ total needs 8 days
	         ⎬ 26.50×8 = $212 per day
	Sick Days ne ⎭ × 8
	                $1696 total for year
	                ÷ 12 $141.33 per
	                       pay check

Health Insurance −120	Health Insurance −140
Life Insurance −45	Life Insurance −40
Reitrement (.035)2722.06 = −95.27	Reitrement −110
Take Home Monthly Salary $2461.79	**Take Home Monthly Salary** $2803.61

5. Which job would you recommend Peyton take? Why?

Jennifer just received a graduation gift of $2,500 from her grandparents. She decided to put the money in a saving account. She is receiving a 3.15% interest rate that is compounded quarterly.

$N = ?$
$I = 3.15$ $\frac{P_y}{c_y} = 4$
$PV = -2500$
$PMT = 0$
$FV = ?$

6. FV Formula **with above information $FV = 2500 \left(1 + \frac{.0315}{4}\right)^{4t}$ $\boxed{OR}$

7. Fill out the following table showing how much money Jennifer has each of the given years.

Year	0	5	10	15	20
Balance	2500	2634.58	2776.39	2925.85	3083.35

Joanne plans to retire in 20 years, and wants to have $500,000 saved by the time she retires. Her bank is offering her a 3.9% interest rate that is compounded monthly.

$N = 240$
$I = 3.9$ $\frac{P_y}{c_y} = 12$
$PV = ?$
$PMT = 0$
$FV = 500,000$

8. PV Formula **with above information $500000 = PV \left(1 + \frac{.039}{12}\right)^{12t}$ OR

9. How much does Joanne need to put away right now to have the $500,000 when she retires?

$$\$229,493.08$$

Joanne's friend David realized he needed to start saving for retirement too. He plans on retiring in 25 years, and also wants to have $500,000 saved up. He has 3 options:

- A savings account earning 3.5% compounded monthly
- A Roth IRA earning 3.75% compounded quarterly
- A money market account earning 2.5% compounded annually.

10.

	Savings Account	Roth IRA	Money Market
Formula	N: 300 I 3.5 PV PMT 0 FV 500,000 P/y 12	N 100 I 3.75 PV PMT 0 FV 500,000 P/y 4	N 25 I 2.5 PV PMT 0 FV 500,000 P/y 1
How much principal does he need?	$208,696.63	~~$185,286.70~~ $196,689.80	~~$274,656.59~~ $269,695.29

11. Which account would you suggest for David and why?

THE ~~SAVINGS ACCOUNT~~ THE ROTH IRA. HE CAN PUT IN THE LEAST AMOUNT AND STILL HAVE $500,000 IN 25 YEARS