TEST POLICIES (REMINDERS)

If you know that you will be absent on the day of a test, it may be possible to make arrangements with me to take the test on an earlier day. This alternative is not automatic!! Each case will be considered individually. You should notify me as soon as possible regarding planned absences. There are no make-up exams provided for unexpected absences. If you miss an exam for an unexpected absence, the average that you earn on the final will make-up the score for your missed exam. There are no exceptions – do not ask!!

HONOR POLICY: You must observe the following rules during any in class exam or quiz.
(1)   Be prepared to move to a designated seat if requested. I will request that the class sit every other row if possible.
(2)   You are not to leave the room without permission.
(3)   You must not look anywhere in the room other than at your own test paper.
(4)   You may not use or even touch a cell phone. Remember your cell phone is to be silenced in class.
(5)   You may not speak to another student.
(6)   You may not share materials with another student.
(7)   Have all your materials ready. You may not retrieve items from your backpack etc.

Failure to observe all of the policies will result in a zero score for the test or quiz.

When you complete the test, hand it to me personally. You may leave the room at this time. The only questions permitted during an exam are in reference to a misprint, omission, or illegible text. You are responsible for being prepared for the exam. Do not ask me how to do the problem, ask for a hint about how to do the problem, or ask whether or not your answer is correct. Please do not share (at this time) your misery of being absent for a particular topic, that you forgot how to do the problem, or that you do not have enough time. You will not have the time to figure out problems on exam day. You are to come prepared, polished, and ready to complete the exam. You must turn in your test paper when time is called. I will give a five minute warning before collecting exams. If you do not hand in your paper at that time, I will not accept it later. It is your responsibility to keep track of time during the exam.

TEST REVIEW PROBLEMS

This test review will give you an idea of the difficulty level of the problems that will be on the exam. This test review contains a sample problem from every topic that will be covered on the exam. Test problems will be similar, but not identical. if you have done all the homework, asked for help as needed, and reviewed the material diligently, you should now find this review easy to moderate to complete. If you struggle with the review, we will go over some solutions in class. However, please be aware that your struggle is an indication that you should go back to the homework sets and work additional problems similar to those on this review in order to perform well on the exam.

The problems begin on the next page. The answers are included at the end of the review.

** Also review group work exercises, quizzes, and class examples. **

1.   How much will $15,400 be worth if it is invested at a simple interest rate of 16% for 5 years.

2.   Find the pay-off amount of a loan of $540 with simple interest of 12% for 3 months.

Finding initial deposit amount

3.   What principle must be deposited to accumulate $1554.30 at 6% interest, compounded quarterly for 3 years?

N =	
I% =	
PV =	
PMT =	
FV =	
P/Y =	

      Answer: _____

4.   Barbara knows that she will need to buy a new car in 3 years. The car will cost $15,000 by then. How much should she invest now at 6%, compounded quarterly, so that she will have enough to buy a new car?

N =	
I% =	
PV =	
PMT =	
FV =	
P/Y =	

      Answer: _____

5.   Southwest Dry Cleaners believes that it will need new equipment in 10 years. The equipment will cost $26,000. What lump sum should be invested today at 6% compounded semiannually, to yield $26,000?

N =	
I% =	
PV =	
PMT =	
FV =	
P/Y =	

      Answer: _____

Finding length of investment or loan

6. How many years will be required to turn $24,000 into $30,402.01 if the interest rate is 12% compounded quarterly?

N =	
I% =	
PV =	
PMT =	
FV =	
P/Y =	

Answer: _____

7. Anne purchased a bond for a museum valued at $8000 for $2400. If the bond pays 5.5% annual interest compounded monthly, how long must she hold it until it reaches its full face value?

N =	
I% =	
PV =	
PMT =	
FV =	
P/Y =	

Answer: _____

Finding interest rate

8. What interest rate compounded monthly is needed to have a $1,000 investment grow to $3,000 in five years?

N =	
I% =	
PV =	
PMT =	
FV =	
P/Y =	

Answer: _____

9. If Jay bought a lot for $8,000 and sold it 10 years later for $ 24,000, what was her percentage rate of return on this investment if it was compounded annually?

N =	
I% =	
PV =	
PMT =	
FV =	
P/Y =	

Answer: _____

Finding final investment accumulation

10. If you deposit $350 a month into your child's college fund for 18 years at 5.7% compounded monthly, how much will you accumulate?

N =	
I% =	
PV =	
PMT =	
FV =	
P/Y =	

Answer: _____

11. If $ 3500 is invested at the rate of 8%, compounded quarterly, what will be the value of the investment 17 years from now, assuming no withdrawals?

N =	
I% =	
PV =	
PMT =	
FV =	
P/Y =	

Answer: _____

12. $765.13 is deposited at the end of each month for 2 years in an account paying 12% interest compounded monthly. Find the amount of the account.

N =	
I% =	
PV =	
PMT =	
FV =	
P/Y =	

Answer: _____

13.   How much will $ 20,000 be worth if it is invested at 9% interest, compounded
       semi- annually for 14 years.

N =	
I% =	
PV =	
PMT =	
FV =	
P/Y =	

       Answer: _____

Finding payment value (investment or loan payment)

14.   Larry wants to start an IRA that will have $ 660,000 in it when he retires in 29
       years. How much should he invest semiannually in his IRA to do this if the interest
       is 13% compounded semiannually? How much total interest will be earned through
       this investment?

N =	
I% =	
PV =	
PMT =	
FV =	
P/Y =	

       Answer: _____

15.   How much will you need to save each month (for 30 years) to accumulate $2,000,000
       in your retirement account if you can earn 8% compounded monthly? How much is
       the balance at the beginning of the 29th year? How much interest will be earned in the
       last year of this investment?

N =	
I% =	
PV =	
PMT =	
FV =	
P/Y =	

       Answer: _____

16.   In order to purchase a home, a family borrows $ 60,000 at 13% compounded
       monthly for 30 years. What is their monthly payment? What is the unpaid balance
       after one year of payments have been made? How much in interest is paid during
       the first year of this mortgage? What is the unpaid balance after 29 years of
       payments have been made? How much interest will the family pay in the last year
       of the mortgage?

N =	
I% =	
PV =	
PMT =	
FV =	
P/Y =	

       Answer: _____

17.   You purchase a home set up a 30-year mortgage $320,000 with a loan company
       that charges 6.5% compounded monthly. What will your monthly mortgage
       payments be? How much in interest will you pay over this mortgage?

N =	
I% =	
PV =	
PMT =	
FV =	
P/Y =	

       Answer: _____

SOLUTIONS:

1.   A = P(1 + rt) = 15400(1 + .16*5) = $27,720

2.   A = P(1 + rt) = 540(1 + .12(3/12)) = $556.20

3. $1300.00   4. $12,545.81

```
N=12
I%=6
▪PV=-1299.99697
 PMT=0
 FV=1554.3
 P/Y=4
 C/Y=4
 PMT:END BEGIN
```

```
N=12
I%=6
▪PV=-12545.81133
 PMT=0
 FV=15000
 P/Y=4
 C/Y=4
 PMT:▮▮ BEGIN
```

5. $14,395.57   6.   8 quarters = 2 years

```
N=20
I%=6
▪PV=-14395.56961
 PMT=0
 FV=26000
 P/Y=2
 C/Y=2
 PMT:▮▮ BEGIN
```

```
▪N=7.999474822
 I%=12
 PV=-24000
 PMT=0
 FV=30402.01
 P/Y=4
 C/Y=4
 PMT:▮▮ BEGIN
```

7.   263.3 months = 21.94 years   8.   22.17%

```
▪N=263.2865031
 I%=5.5
 PV=-2400
 PMT=0
 FV=8000
 P/Y=12
 C/Y=12
 PMT:▮▮ BEGIN
```

```
N=60
▪I%=22.17463732
 PV=-1000
 PMT=0
 FV=3000
 P/Y=12
 C/Y=12
 PMT:▮▮ BEGIN
```

9.   11.6123%   10. $131,387.45

```
N=10
▪I%=11.6123174
 PV=-8000
 PMT=0
 FV=24000
 P/Y=1
 C/Y=1
 PMT:▮▮ BEGIN
```

```
N=216
I%=5.7
PV=0
PMT=-350
▪FV=131387.4487
 P/Y=12
 C/Y=12
 PMT:END BEGIN
```

11. $13,454.88   12. $20,638.21

```
N=68
I%=8
PV=-3500
PMT=0
▪FV=13454.87676
 P/Y=4
 C/Y=4
 PMT:END BEGIN
```

```
N=24
I%=12
PV=0
PMT=-765.13
▪FV=20638.20716
 P/Y=12
 C/Y=12
 PMT:END BEGIN
```

****

13. $68,594.00

```
N=28
I%=9
PV=-20000
PMT=0
■FV=68593.99985
P/Y=2
C/Y=2
PMT:■■ BEGIN
```

14. $1141.79

```
N=58
I%=13
PV=0
■PMT=-1141.7939…
FV=660000
P/Y=2
C/Y=2
PMT:■■ BEGIN
```

Total paid in 58*1141.79 = 66,223.82.
Total amount in account less amount paid in: 660,000 − 66,223.82 = $593,776.18.

15. $1,341.96   Only 360 − 12 = 348 have been made in the first 29 years.

```
N=360                              N=348
I%=8                               I%=8
PV=0                               PV=0
■PMT=-1341.9581…                   PMT=-1341.9581…
FV=2000000                         ■FV=1831296.051
P/Y=12                             P/Y=12
C/Y=12                             C/Y=12
PMT:ENd BEGIN                      PMT:ENd BEGIN
```

Total amount in account less balance at the beginning of the last year less amount paid
into account in the last year is the total interest earned in the last year.
2,000,000 − 1,831,296.05 − 12(1341.96) = $152,600.43

16. $663.72   In 1 year only 12 payments are made. The bal. = $59,825.19

```
N=360                              N=12
I%=13                              I%=13
PV=60000                           PV=60000
■PMT=-663.71971…                   PMT=-663.71971…
FV=0                               ■FV=-59825.19085
P/Y=12                             P/Y=12
C/Y=12                             C/Y=12
PMT:■■ BEGIN                       PMT:■■ BEGIN
```

The total paid to the principle of the loan in the first year is 60,000 − 59,825.19 = $174.81.
The total in payments made is 12*663.72 = $7964.64.
The difference: 7964.64 − 174.81 = $7789.83 is the interest paid in the first year.

16 continues.   In 29 years, 348 payments have been made. The balance is $7431.03

```
N=348
I%=13
PV=60000
PMT=-663.71971…
▪FV=-7431.033988
P/Y=12
C/Y=12
PMT:END BEGIN
```

In the last year of the loan, the total paid is 12*663.72 = $7964.64. (This is the same amount paid every year. Their loan agreement is $663.72 a month.) The total amount of interest is the total paid 7964.64 less principle paid 7431.03 = $533.61.

17. $2022.62

```
N=360
I%=6.5
PV=320000
▪PMT=-2022.6176…
FV=0
P/Y=12
C/Y=12
PMT:█ BEGIN
```

360 payments of 2022.62 will be made. Subtract from the total payments, the total owed, that will give the total dollar amount in interest over the entire loan.
360(2022.62) − 320,000 = $408, 143.20