**Finance MSIP Assignment**

 /45 NAME:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**For each question below use the method of your choice unless otherwise specified. If it says to use a specific method you MUST use it or it will not be marked. *Some* solutions are provided at the end.**

1. Jesse is saving for a new computer. She deposits $100 at the end of each month into an account that earns 4% per year compounded monthly. Determine the amount of the RESP at the end of 18 years **USING THE FORMULA. (4 marks)**

2. Consider an annuity of $1000 deposited at the end of each year for 5 years at 3.5% per year compounded annually. a) Calculate the amount of the annuity. Use the method of your choice.

(5 marks)

N=

I%=

PV=

PMT =

FV=

P/Y=

C/Y=

PMT=END BEGIN

b) What is the total amount of interest earned?

3. Victor wants to withdraw $900 at the end of each month for 10 months, starting 1 month from now. His bank account earns 5.4% per year compounded monthly. How much must Victor deposit in his bank account today to pay for the withdrawals? **You must use the formula.** (4 marks)

4. Meave wants to set up an annuity to help with her college expenses. She uses the TVM Solver to explore a possible plan as seen below. (4 marks)

a) What regular withdrawal does Maeve plan to make? \_\_\_\_\_\_\_\_\_\_\_\_\_

b) How often will she make these withdrawals? \_\_\_\_\_\_\_\_\_\_\_\_\_\_

c) What is the total number of withdrawals Maeve will make? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

d) How much will Maeve have to deposit to provide for the withdrawals? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

N=32.00

I%=3.50

PV=10678.37 \*

PMT =-350.00

FV=0.00

P/Y=12.00

C/Y=12.00

PMT=END BEGIN

5. Meagan wants to save $250 000 for her retirement in 40 years. She begins her regular deposits immediately. How much must she deposit at the end of each year at 12% per year compounded annually to achieve her goal? Use the method of your choice. (4 marks)

N=

I%=

PV=

PMT =

FV=

P/Y=

C/Y=

PMT=END BEGIN

6. Consider these two annuities. (8 marks)

Annuity #1: $100 deposited at the end of each month for 5 years at 4% per year compounded monthly.

Annuity #2: $300 deposited at the end of each quarter for 5 years at 4% per year compounded quarterly.

a) Calculate the amount of each annuity. **You must use the TVM.**

N= N=

I%= I%=

PV= PV=

PMT = PMT=

FV= FV=

P/Y= P/Y=

C/Y= C/Y=

PMT=END BEGIN PMT=END BEGIN

b) Calculate the total DEPOSIT for each annuity.

 Annuity #1: Annuity #2:

c) Why are the amounts different even though the deposits are the same?

6. Isolate R in the formula below. Beside each step explain what you did. (4 marks)

 $A=\frac{R[\left(1+i\right)^{n}-1}{i}$

7. Terri borrows $12 000 to buy a car. She can repay her loan in 2 ways. The interest is compounded monthly. (8 marks)

 Option A: 36 monthly payments at 6.9% per year

 Option B: 60 monthly payments at 8.9% per year.

a) What is Terri's monthly payment under each option?

N= N=

I%= I%=

PV= PV=

PMT = PMT=

FV= FV=

P/Y= P/Y=

C/Y= C/Y=

PMT=END BEGIN PMT=END BEGIN

b) How much interest does Terri pay under each option?

 Option A: Option B:

c) Give a reason why Terri might choose each option.

 Option A: Option B:

8. Edward is able to save $300 a month for a special trip. (4 marks)

a) Predict how much he would have in the bank after 3 years in an account that earns 6% per year compounded monthly.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Check your prediction:

N=

I%=

PV=

PMT =

FV=

P/Y=

C/Y=

PMT=END BEGIN

b) What do you think would happened if you doubled the interest rate? Explain. \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**BONUS: Create a question where a person must determine the present value. Solve your own question. (4 marks)**

ANSWERS: 1. $31 559.24 2. a) $5362.47 3) $8781.20 5) $325.91 6) a) $6629.90 AND $6605.70

7. a) $369.98 and $248.52