Foundations of Math **Name: _____ May 2018**
In Class Assignment – Investing Money

FORMULAS…

Simple Interest

$$I = \Pr t$$
$$A = P + I$$
$$A = P + \Pr t$$
$$A = P(1 + rt)$$

Compound Interest

$$A = P\left(1 + \frac{r}{n}\right)^{nt}$$
$$I = A - P$$

Rule of 72 and Rate of Return

$$Doubling\ Time = \frac{72}{Rate}$$
$$ROR = \frac{\$earn}{\$invested} \times 100\%$$

Present Value

$$P = \frac{A}{\left(1 + \frac{r}{n}\right)^{nt}}$$

INSTRUCTIONS: ALL WORK MUST BE SHOWN…JUST WRITING DOWN ANSWERS WILL NOT BE ACCEPTED!

1. a) How much simple interest a $7500 investment will accumulate if invested for 12.5 years at 3 % per year paid annually. [2]

Interest = $_____

b) What will be the future value of this investment? [1]

Future Value = $_____

2. Complete the following chart… [6]

Formula	Principal	Simple Interest Rate	Time	Interest
a)	$4250		20 years	$1275
b)		4 %	40 weeks	$190.77
c)	$782 000	2.25 %	`	$140 760

3. Some lucky Miramichier won $32 410 on the May 3rd Big Brothers & Big Sisters Gold Rush draw…
   a) If this person chose to invest the entire amount at 4.5%/a **compounded** monthly for 10 years, how much would their winnings be worth at the end of the term? [2]

Amount = $_____

b) Determine the rate of return on the above investment? [2]

Rate of Return = _____ %

c) How much money would this $32 410 earn in 6 months if invested at 5%/a simple interest? [2]

Interest = $_____

4. Richard invested $1500 at 3% compounded annually. How long will it take for the investment to have a future value of approximately $12 000? [2]

Time = _____

5. Malia, who is only 8 years old, has inherited $8000 from a long lost aunt. She must wait until she is 18 years old to claim her inheritance. In the meantime the $8000 will be invested so that it will accumulate interest.

a) Determine ***how much interest*** the inheritance will earn if invested at 7%/a **compounded** annually. [3]

Interest = $_____

b) Determine ***how much interest*** the inheritance will earn if invested at 7%/a **compounded** monthly. [3]

Interest = $_____

c) How much more interest is earned if the money is compounded monthly rather than annually? [1]

How Much More? _____

6. How much money must be invested into a GIC at 2.8 % per year compounded semi-annually in the year 2017 if you would like to have $60 000 in the year 2042? [3]

Investment = $_____

7. Jamie invested $25 000 from an inheritance at 3.5 % simple interest. If he leaves the investment for a term of 20 years, what would be his rate of return? [3]

Rate of Return = _____ %