

T2

University of Saskatchewan

College of Engineering

GE 348.3 Engineering Economics

Midterm Examination

Time: 50 minutes

February 5, 2007

- Open textbook
- Be neat
- Show all work
- Place **ALL** answers in the box
- Write your name and student number

Question	Marks Available	Marks Obtained
1	30	
2	30	
3	20	
4	20	
TOTAL	100	

Name: _____

Student Number: _____

- 30 Marks** 1. You just bought a house for \$163,000 and placed 15% as a down payment. You also had to pay CMHC insurance on the loan amount which can be calculated as 2% of the principle. You also decide to finance the CMHC insurance. A mortgage broker gave you a nominal interest rate of 5.1% compounded semi annually with a 19 year amortization period. The term of the mortgage is four years. What are the initial monthly payments on the mortgage?

Monthly payments:	
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- 30 Marks** 2. Your 60 year old father has approached you with respect to some detailed financial planning questions. He has \$558,000.00 in a high risk investment and wants to start making monthly withdrawals throughout his retirement. He feels he will only live to 75 years old and wants to have \$58,000.00 in his account at that time, i.e. to cover off funeral expenses. His investment planner explains that he will be able to earn 11% in a new, moderate risk, fund. How much can your father withdraw on a monthly basis?

Monthly payments:	
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20 Marks 3. You notice a sign in the local bank that is advertising an "Elevator GIC" and in large font the ad states that you "**Earn 12% in the Final Year**". There is no doubt that earning 12% on a GIC is an excellent rate since there is little to no risk associated with the investment. Intrigued and excited, you read on and notice in the fine print that the investment yields 2% in the first 3 years, 3% in the fourth year, followed by the 12% rate in the final and fifth year. In order to make a wise investment you must calculate the "Actual" rate of return normalized over the five year period. Clearly state your assumptions below.

Actual normalized rate of return over the five year period:	
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- 20 Marks** 4. Briefly explain some of the factors you would consider in paying less for the mortgage example in question #1. For example, what methods could you employ to be more effective with your hard earned after tax dollars. Back up one of your options with a numerical example clearly demonstrating how much you would save by employing this method.