

SAMPLE EXAMINATION

- Instructions:
1. Open text, closed notes.
 2. Show all your calculations.

1. Twenty years ago, laborers in a certain city were earning \$2.00 per hour. Now they earn \$10.00 per hour.
 - (a) What is the compound annual growth rate (answer as a % and 2 decimal places)?
 - (b) If they are able to maintain the same growth rate in the future, what pay rate will they earn twenty years from now (answer to the nearest penny)?

2. Assume that the population of a certain country is 218,000,000 now and will increase this coming year by 1,700,000.
 - (a) What is the current rate of increase (answer as a % and 2 decimal places)?
 - (b) If the increase continues to compound annually at that rate, how long before it reaches 300,000,000 (answer to 1 decimal place)?

3. Your hometown bank offers to loan you money to complete your last two years in college. They will loan you \$4,000 today, and another \$4,000 one year from today. You will graduate two years from today and start working immediately. The bank will accept repayment of the loan in 10 equal annual installments, the first installment being due 3 years from today (i.e., at the end of the first year of work). The bank will be charging 8% interest on all unpaid balances. What is the amount of your annual installments?

4. Using an annual interest rate of 6%, compute x for the cash flow shown below. Also draw a cash flow diagram.

<u>EOY</u>	<u>\$</u>
0	-x
1	0
2	0
3	0
4	100
5	100
6	100
7	100
8	100