1. You are saving for a new car. You wish to accumulate sufficient funds by making sixty monthly deposits into a savings account, beginning today. Interest is a nominal 6%, compounded monthly.

   You have two goals:
   a. Have $18,000 five years from today to buy a car
   b. Have enough money left over to provide for 48 monthly payments of $100 to operate the car (gas, maintenance, etc.).

   Assume you will need the first $100 on the day you buy the car, and that the nominal interest rate is 6%, compounded monthly.

   How much does your monthly deposit need to be? (10 points)
2. $1000$ five years from now plus $1000$ ten years from today is known to be equivalent to a series of ten annual payments of $\$X$ commencing six years from today. If $i=6\%$, what is $\$X$? \(8 \text{ points}\)

3. Evaluate $300\ddot{s}_{\bar{8}|}$ assuming $d=8\%$. \(7 \text{ points}\)
4. At time $t=6$, the current value of $A + B$ is equivalent to the current value of $C + D$, where:

- $A$ is a ten year annuity-certain of $X$ per year, first payment occurring at time $t=1$
- $B$ is $5000$ payable at time $t=5$
- $C$ is an annual perpetuity with first payment of $600$ at time $t=7$
- $D$ is $10,000$ payable at time $t=10$

If $i=8\%$, what is $X$? (10 points)
5. A perpetuity-due which pays $1,200 per year and costs $13,200 is known to be equivalent to a perpetuity of $X per year which has its first payment five years from today. What is $X? (10 points)

6. $A$, $B$, and $C$ are dividing the proceeds from the sale of their company. Each person will receive an equal share of the proceeds. The company has been sold for $X$. Instead of a single payment, however, the buyer has offered 30 years of annual $30,000 payments, beginning one year from today. From these payments, $A$ has asked to receive $15,000 per year for $n$ years and nothing thereafter. $B$ and $C$ have agreed to this. Assuming $i^{(4)} = 7.68\%$, what is $n$? (10 points)
BONUS QUESTION  (up to 5 points; quiz score cannot exceed 100%)

A special annual perpetuity due pays $1 for the first two payments, $2 for the next two payments, $3 for the next two payments, and so on. What is the present value of this perpetuity, if $i=8\%$?

**** END OF QUIZ ****