Problem A. For a GPM mortgage of $200,000 at 7% that starts with a payment of 1100 per month and increases by 8% each anniversary date, how much interest will be paid in year 2, and what is the balance at the end of year 2?

Problem B. Use the following data for the next 14 questions. You have applied for a $225,000, 30-year ARM mortgage with the features noted below. Payments and interest rates are adjusted each year. You will stay in the house for three years.

Initial Interest rate = X.XXX%  (In effect for first year, i.e. Year 1)
Index = XXXXX  Margin = X.XXX%
Interest Rate Cap: XXX/XXX  Payment Cap: XX % up or down each year
Negative Amortization: XXXXX  Discount Points = X.X

Assume the index changes over time as noted in the table below.

<table>
<thead>
<tr>
<th>Year</th>
<th>Index</th>
<th>Int. Rate Charged</th>
<th>Monthly Payment</th>
<th>Amount Paid to Interest</th>
<th>EOY Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>y.yyy%</td>
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</tr>
<tr>
<td>3</td>
<td>q.qqq%</td>
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</tbody>
</table>

The first 12 questions are to fill in the blanks in the table above

13. What is the yield to the lender, expressed as an APR? 7.86%
14. What is the yield to the lender, expressed as an EAY?

Example B1:
Initial Interest rate = 3.50%  (In effect for first year, i.e. Year 1)
Index = 4.18  Margin = 2.000%
Interest Rate Cap: None  Payment Cap: None
Negative Amortization: N/A  Discount Points = 1.5

Assume the index changes over time as noted in the table below.

<table>
<thead>
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<th>Year</th>
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</tr>
<tr>
<td>2</td>
<td>6.25%</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>3</td>
<td>8.75%</td>
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The first 12 questions are to fill in the blanks in the table above

13. What is the yield to the lender, expressed as an APR? 7.86%
14. What is the yield to the lender, expressed as an EAY?
Example B2:
Initial Interest rate = 3.50%  (In effect for first year, i.e. Year 1)
Index = 4.18     Margin = 2.500%
Interest Rate Cap: 2%/6%     Payment Cap: None
Negative Amortization: N/A     Discount Points = 3.5

Assume the index changes over time as noted in the table below.

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<th>EOY Balance</th>
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</tr>
<tr>
<td>2</td>
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</tr>
</tbody>
</table>

The first 12 questions are to fill in the blanks in the table above

13. What is the yield to the lender, expressed as an APR? 6.71
14. What is the yield to the lender, expressed as an EAY?

Example B3:
Initial Interest rate = 3.50%  (In effect for first year, i.e. Year 1)
Index = 4.18     Margin = 2.750%
Interest Rate Cap: None     Payment Cap: 7.5% per year
Negative Amortization: Allowed     Discount Points = 2.5

Assume the index changes over time as noted in the table below.

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<th>Int. Rate Charged</th>
<th>Monthly Payment</th>
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<th>EOY Balance</th>
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</thead>
<tbody>
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<tr>
<td>2</td>
<td>6.25%</td>
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<tr>
<td>3</td>
<td>8.75%</td>
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</tbody>
</table>

The first 12 questions are to fill in the blanks in the table above

13. What is the yield to the lender, expressed as an APR? 8.76%
14. What is the yield to the lender, expressed as an EAY?

Problem C. Use the following data for the next 4 questions. A SAM mortgage is made for 155,000 for a 30-year term at 6% with 3 points. The lender will receive 40% of any increase in the property value over the next three years. The property is currently valued at 175,000. Assume the property increases in value at 9% per year.
1. What is the payment during the second year of this mortgage?
2. Not including the appreciation split, what is the loan balance after 3 years?
3. After 3 years, what is the lender share of the house appreciation?
4. What is the yield to lender (APR) if the borrower repays after 3 years?

**Problem D.** Use the following data for the next 6 questions. A PLAM mortgage is made with the following terms. Amount 160,000. Initial interest rate 3%. Term 15 years. Points: 4. Inflation is 14 percent the first year and 9 percent the second year. Payments are adjusted at each anniversary.
1. What is the initial payment?
2. How much is paid into interest the first year?
3. What is the beginning loan balance for year 2?
4. What is the payment during year 2?
5. What is the mortgage payoff at the end of 2 years?
6. What is the yield to lender (APR) if the loan is paid off after 2 years?