

**Exam II - Sample Exam**  
**Chapter 5 Finance (sections 5.1 thru 5.3)**

1. Find the amount in your bank account if you start with \$5000 and leave it in the bank for two years and 6 months at 7.5% compounded monthly.

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2. Jake has to pick between three car loans, what is the total amount Jake will owe for each loan:

a. \$20,000 for 3 years at 12% per annum simple interest?

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b. \$20,000 for 3 years at 9.5% compounded daily?

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c. \$20,000 for 5 years at 8% compounded monthly?

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Which loan should Jake take and why?

3. Heather deposits \$12,000 into an account that earns 5.25% interest. How much will be in the account after 7 years if the interest is
- a. Compounded quarterly?

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b. Compounded daily?

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c. Simple?

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4. Susan and Elliot want to buy a townhouse, but they need a down-payment of \$35,000.
- If they want to buy the townhouse in two years, how much should they save each month in a savings account that pays 6% per annum compounded monthly? (hint: future value of an annuity)

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- Once Susan and Elliot have their down-payment of \$35,000 they apply the down-payment to a house costing \$250,000. If they take out a 30 year mortgage at 7.5% what is their monthly payments? (hint: amortizing a debt)

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5. A bank advertises that it pays  $4\frac{1}{4}\%$  compounded daily. What is the effective interest rate?

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6. Ian's father planned well for his college education. He deposited \$200 every month into an account with 8.25% interest compounded monthly. How much will Ian have in his account at the end of 18 years?

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7. Professor Smith wants to have \$250,000 in a retirement account ten years from now.
- If the account pays 12% per annum and is compounded quarterly, what should her quarterly deposits be to meet her goal? (future value of an annuity)

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- Once professor Smith retires how much money can she withdraw quarterly from the account (with 12% per annum, compounded quarterly) for the next 15 years so the balance in the account after these 15 years is 0? (hint: present value of an annuity)

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8. Suri Cruise's parents set up a trust fund for her. The trust fund amounts to \$1,000,000 earning 10% compounded semi-annually and she is to receive the money in equal annual installments for the next 25 years. How much should she receive every 6 months?

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9. Meghan borrows \$15,500 at an interest rate of 12% per year to buy a car. The loan is to be paid in monthly installments at the end of each month for 3 years .
- a. How much will each payment be?

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- b. How much interest will Meghan end up paying at the end of the loan?

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10. Jim and Jacquie estimate that they can afford to pay \$2,500 for a monthly mortgage payment. If their mortgage is a 30 year mortgage at a rate of 7.25% compounded monthly
- a. How much can they afford to borrow?

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- b. How much interest will they have paid at the end of the 30 year mortgage?

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11. Chris decides to stop buying coffee and a cookie at Jazzman's everyday and instead invest that money daily into an account that pays 7.5% compounded daily, if Chris spends \$4.30 everyday for his coffee and cookie
- a. How much will be in the account 10 years from now?

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- b. How much interest did Chris earn by saving the money he spent on coffee and cookies?

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12. Mr. and Mrs. Levine have just purchased a \$375,000 house and have made a down payment of 20%. They can amortize the balance at 7.5% for thirty years.

- a. What is their monthly payment?

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- b. How much total interest will they pay?

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13. David took out a 5 year car loan of \$20,000 at 4.5% interest. Make an amortization table showing his first 5 payments.

Payment Number	Amount of Payment	Interest	Principal	Balance
0				20,000
1				
2				
3				
4				
5				