

Math 1313

Chapter 5

Mixed Problems from Sections 5.1 – 5.3

Types of Problems Presented in Chapter 5

1. Simple Interest
2. Accumulated Amount with simple interest
3. Future Value with compound interest
4. Present Value with compound interest
5. Effective Rate
6. Future Value of an Annuity
7. Present Value of an Annuity
8. Amortization
9. Sinking Fund

1. Anna wants to have \$5,000 saved when she graduates from college so that she will have a down payment for a new car. Her credit union pays 5% annual interest compounded monthly. How much money should she deposit each month to have the money available when she graduates in 3 years? ***What kind of problem is this?***
2. Bill bought a new car. His financing deal was a 5 year loan at 9.98% annual interest compounded monthly. His monthly payment was \$421.25 and he paid no money down. What was the total purchase price of the car? ***What kind of problem is this?***
3. Sergio wants to have \$5,000 in the bank in 3 years to pay for an Alaskan cruise. How much cash should he deposit today, if the bank pays 4% annual interest compounded quarterly, if he wants to be sure to have the funds available in 3 years? ***What kind of problem is this?***

4. Edwin and Frances are buying a new home. The purchase price is \$155,000. They will make a 10% down payment on the house. Their loan for the house is a 30 year conventional loan at 6.75% per year compounded monthly. Find their monthly payment. *What kind of problem is this?*

5. Grace decides to start a savings program when she gets her first job after graduation. She deposits \$2,500 into her credit union savings account. The credit union pays 3.8% annual interest compounded quarterly. How much money will she have in the account after 4 years? *What kind of problem is this?*

6. Helen bought a new computer. The finance company charged her 15% per year compounded monthly. Her monthly payments were \$88.23 for 2 years and she made no down payment. What was the original price of the computer? *What kind of problem is this?*

7. Gary decided to save some money for his daughter's college education. He decided to save \$300 per quarter. His credit union pays 4.5% per year compounded quarterly. How much money will he have available when his daughter starts college in 10 years? *What kind of problem is this?*

8. Jolene owns a clothing store. She anticipates that she will need to replace her telephone system in 3 years. She projects that a new system will cost \$12,500. Her bank pays 5% annual interest compounded semiannually. How much should she deposit semiannually in order to be able to pay cash for the new phone system? *What kind of problem is this?*

9. Kris wins the lottery and decides to deposit \$25,000 of his winnings in an account for his nephew. The bank pays 6.2% annual interest compounded monthly. How much will he be able to give his nephew in 5 years? *What kind of problem is this?*

10. Megan bought a new car. Her monthly car payments are \$385.17 for 4 years. Her financing rate was 8.9% annual interest compounded monthly. She made a \$1,200 down payment. What was the total purchase price of the car? *What kind of problem is this?*

11. Nicholas and Olivia are buying a house for \$250,000. They made a 15% down payment. Their financing is for 30 years at 6.78% annual interest compounded monthly. Find their monthly payment. *What kind of problem is this?*

12. Phong's employer deposits \$1,000 per quarter into a retirement plan that earns 3.5% annual interest compounded quarterly. How much will be in the plan when he retires in 32 years? *What kind of problem is this?*

13. David owns a small business and knows that he will need to purchase two new delivery vans in 5 years. He anticipates that the vans will cost the business \$28,500 each. His bank pays 4.2% per year compounded monthly. How much should he deposit each month so that he will have the funds available to buy the vans in 5 years? *What kind of problem is this?*