

Time Value of Money Problems

Handout 1

1. Today you deposited \$5000 into a savings account paying 12% interest. How much should you have in 15 years?
2. A loaf of bread today costs \$1.28. If grocery prices are going up at the rate of 8% per year, how much will a loaf of bread cost in 6 years?
3. The average price of new homes is \$138,500. If new home prices are increasing at a rate of 15% per year, how much will a new home cost in 12 years?
4. You deposit \$3,500 into an account every year for 6 years. The account pays 7% interest. How much will you have at the end of that time?
5. You deposit \$4,000 each year into a retirement account paying 8% interest. How much will you have in 25 years when you retire?
6. What is the present value of \$5,000 to be received in 7 years at an interest rate of 7%?
7. You can buy a parcel of real estate today that you estimate will bring \$15,000 in 9 years. Assuming your money is worth 9%, how much would you be willing to pay for the property?
8. An insurance company is willing to settle a dispute with you. They will pay you \$7,000 per year for the next 8 years, or one lump sum right now. Assuming your money is worth 5%, how much would you be willing to settle for?
9. You currently receive \$10,000 per year on a contract. You expect it to run another 7 years. Someone wants to buy the contract from you. If you can earn 12% on other investments of this quality, how much would you be willing to sell the contract for?
10. You can insulate your home for \$7,200. You figure you can save 15% per year on your heating bill if you insulate. Your home was bought 15 years ago for \$38,500. You figure real estate prices have gone up 16% each year. You plan to live in the house another 10 years. Your home has five bedrooms, 2367 square feet and requires 5400 BTU's per hour to heat. You heat with oil and use 175 barrels of oil per year. Oil currently costs \$25 per barrel. Money is worth 5% to you. Should you insulate your home. Why?

11. Real estate values in your area are going up at the rate of 14% each year. You want to buy an average house. Today the average price of homes is \$128,000. Lenders require 20% down payment. You figure you'll be ready to make the down payment in 6 years. How much should it be?
12. You can buy a share of ownership in a partnership right now and you have been assured that you will be able to sell it for \$15,000 five years from now. Assuming your money is worth 5%, how much would you be willing to pay for this share?
13. If you deposit \$6,000 per year into an account paying 16% interest, how much should you have in that account eight years from now?
14. You are considering the purchase of two different insurance annuities. Annuity A will pay you \$10,000 each year for eight years. Annuity B will pay you \$8,000 per year for 12 years. Assuming your money is worth 10% and that each costs the same to purchase today, which annuity would you prefer?