Assignment: Homework 4c
REMEMBER TO SHOW FORMULAS AND YOUR WORK
Due: Thursday, October 14, 2004

1. A company posts a bond of $200,000 for reclamation of their mining property after 18 years of operation. If the bond accumulates 6.5% interest, how much money will the operation have to work with at the end of mine life?

2. Company A invests $400,000 into company B’s mining operation. For the first five years, it is a good investment earning 12% interest. However, for the next ten years it does less well, earning only 8.5% interest. A decides to sell out.

   a) How much does company B owe company A at that time?

   b) If the average interest rate for this period had been 10%, what is the present value of this amount?

   c) Is this a good investment? Why?

3. A company must buy a new dragline at the end of 6 years for a new operation. They already have a contract price of $22,750,000 at that time. If the company can currently set aside $2,250,000 per year at 9.5% interest, how much additional cash will they need when it is time to make their purchase?
4. The company in problem 3 decides to set aside exactly enough money to purchase the
dragline in 6 years. At 9.5% interest, how much must they set aside annually?

5. An engineer wants to do volunteer work in a third-world country, and decides he
would like to do it for 5 years. He has $175,000 put away that he can use to live on
during this period. If his account earns 5.5%, what is the maximum amount he can
withdraw every year, and exactly deplete his account in the last year?

6. This same engineer now decides that he really will need $45,000 per year to do this.
At the same conditions, how much should he have saved to do this?

7. The Andalex Coal Company with an excellent track-record of earnings wishes to open
a $350,000,000 longwall mine with two walls and seven continuous units. It will invest
$125,000,000 up front and borrow the remainder from the Continental Bank of Illinois.
It must repay the bank over 10 years at 8.0%. What are Andalex’s annual payments?

8. Peabody decides to pay in monthly installments instead of annually. What is their
monthly payment? How much will they save in the first year by doing this?
9. The Badger Coal Company is comparing three different stripping operations, but can only invest in one of them. If they are all four-year projects, and the board of directors is insisting upon a minimum payback of 25% per year, which of these operations is feasible?

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10. At an interest rate of 6.25%, what is the net present value of all four projects in the above problem? What is the actual rate of return for each of the above projects?