2-3 Savings Accounts

Advanced Financial Algebra

Types of Savings Accounts

- Savings Accounts
- Money Market Accounts
- CDs (Certificates of Deposit)
- Safe Deposit Boxes
- Etc.

Savings Accounts

- The bank pays you interest of r the use of the money you deposited in your account.
- The bank uses your money to loan other people money.
- $ you put in the bank = principal

CD = Certificate of Deposit

- CDs usually pay more interest than a savings account.
- You agree to leave money in the account for a certain period of time.
- Most CDs have early withdrawal penalty fees.

Example 1 – strategy to save money

- Lisa starts with $11.25 in a glass jar in coins. Each day, she adds $0.70 in change. How much will she have in 100 days?

- SOLUTION:
- This is an arithmetic sequence $= {}_1 + \left(- 1 \right)$

$= 11.25 + 0.70(n - 1)$

On the 100th day

${}_{100} = 11.25 + .7(100\text{-}1)$

${}_{100} = 11.25 + .7(99)$

${}_{100} =$ **$80.55 on the 100th day**

Example 2 – comparing interest rate offers

- Grace plans to deposit $5,000 in a CD for 2 years and is trying to pick a bank. Which one should she chose if these are their offers?

Example 2 – Solution

- First change to decimals by dividing numerator (top #) / denominator (bottom #), then add zeros on to the end so they all have the same amount of decimal places.

- Then list them in ascending order which is smallest to biggest: 1.22%, $1\frac{1}{4}$%, 1.3%, $1\frac{3}{8}$%
- **The best rate is at E-Save Bank**.

Example 3 – minimum balance required

- Raoul's savings account requires that he maintain a minimum balance of $500 or he is charged a $4 fee. If he had $716.23 in his account and then withdrew $225, what is his remaining balance?

- SOLUTION:

- Raul's previous balance $716.23
- Withdrawal -$225.00
- Balance AFTER withdrawal = $491.23 leftover which is <$500
- Raul is charged a fee for falling below minimum balance - $4.00
- REMAINING BALANCE AFTER ALL TRANSACTIONS = ***$487.23***

Assignment: pg 87 #1-8all

- #1
- a) How might Alan Greenspan's (economist) words "anything that we can do to raise personal savings is very much in the interest of this country" apply to this chapter?
- b) What "play on words" do you notice in his quote that applies to this chapter?
- #2 The sixth grade class at West Side School starts a charity collection on Monday, with $78 donated by the Parents Organization. They plan to add $2 to the fund each day. How much will they have after 90 days?
- #3 Arrange the following interest rates in ascending order: 3.4%, 3.039%, $3\frac{3}{16}$%, 3.499%, $3\frac{1}{2}$%.
- #4 A finite arithmetic sequence has 12 terms. The last term is 100 and the common difference is 3. What is the first term?
- #5 Josh has a savings account at a bank that charges a $10 fee and pays no interest for every month his balance falls below $1,000. His account has a balance of $1,203.44 and he withdraws $300. What will his balance be in six months if he makes no deposits or withdrawals?

Assignment: pg 87 #1-8all continued

#6 Linda's savings account balance has fallen below the $1,000 minimum balance required to receive interest. It is currently $871.43. The monthly fee charged by the bank for falling below the minimum is x dollars.

a) Express algebraically how you compute the number of months it will take Linda's account to reach a zero balance if she makes no deposits.

b) Explain your answer to a).

c) If x = 9, how many months will it take?

#7 John, Paul, and George are having a disagreement over interest rates. John says that $6\frac{3}{4}\%$ can be expressed as 6.75%. George things that $6\frac{3}{4}\%$ can be expressed as 0.0675. Paul remembers converting percents to equivalent decimals and thinks it can be expressed as 0.0675%.

a) Who is correct, and who is incorrect?

b)Explain why

Assignment: pg 87 #1-8all continued

- #8 Beth and Mark would like to put some savings in the bank. They most likely will not need this money for 4 years, so Beth wants to put it in a 4-year CD. Mark wants to put the money in a savings account.
  - a) What is the advantage of a CD?
  - b) What is the disadvantage?