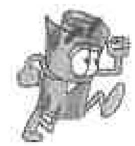
9.4 FL: Accounts & Interest

Key



Recall:

Financial institutions such as banks provide you with the service of taking care of your money. There are a few "perks" to putting your money in the bank. One advantage is that the bank will pay you interest because they actually use your money to lend to others. This earns you money! Another is that they often have ATM's at many different locations making access to your money easy! (Sometimes too easy.) Most accounts for children or students are free but be careful of the terms and conditions. Even free accounts can have charges for various transactions.

Consider Corrine's bank statement for the month of June:

Date	Details	Debits (-)	Credits (+)	Balance
June 2	Cash deposit		10.00	10.00
June 7	Direct deposit		146.73	156.73
June 8	ATM withdrawal	20.00		136.73
June 8	ATM charge	2.50		134.23
June 8	Bank machine fee	1.50		132.73
June 8	Cinema	11.95		120.78
June 8	Joe's Subs	7.85		112.93
June 12	ATM withdrawal	20.00		92.93
June 12	ATM charge	2.50		90.43
June 12	Bank machine fee	1.50		88.93
June 15	ATM withdrawal	20.00		68.93
June 21	Direct deposit		171.06	239.99
June 21	ATM withdrawal	40.00		199.99
June 21	Just Jeans	67.20		132.79
June 22	Cinema	11.95		120.84
June 28	Phone/internet	87.40		33.44
June 28	ATM withdrawal	20.00		13.44
June 30	Interest		0.01	13.45
June 30	Account fee	8.75		4.70

What is Corinne's opening balance?

$0

Closing balance?

$4.70

Do credits increase or decrease the amount in her account? How do you know?

Increase, the balance increases after each credit.

What is the total of credits? Debits? Which one SHOULD be greater? Explain.

Total credits $327.80

total debits $323.10

credits should be greater because the balance was higher at the end of the month than at the beginning.

How many transactions did she have this month? How many were free?

13 transactions in or out

11 were free

What do you think the account fee at the end of the month is for? Would this fee be the same every month?

It could be a fee for holding the account, or it could be partially (or completely) based on charges for transactions etc.

Why is it important for Corrine to read her bank statement each month?

to keep track of earning and spending (to make decisions about her money) and to see where she is being charged for using atms/other fees.

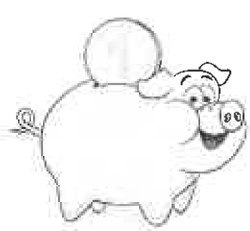
Why do you think Corrine has a bank account? (What benefits does it provide?)

It is a place to store her money safely and keep track of it. She can also earn money if she saves more.

Interest:

Remember, interest can relate to money earned for an investment or money paid for a loan! It works the same both ways, kinda☺

<u>Simple Interest</u>: money paid at the end of an agreed upon time period.



$I = prt$

Interest = principal (amount of money) x rate (decimal) x time (years)

1. You decide to invest $300.00 from your savings. You have two options:
   - ❖ Option A: Lend it to your parents for 1 year at an interest rate of 6% per year.
   - ❖ Option B: invest it for 3 years at a bank that pays simple interest of 5% per year.

a) What amount of interest will you receive with each option?

A

$I = 300 \times 0.06 \times 1$

$\boxed{I = \$18}$

B

$I = 300 \times 0.05 \times 3$

$\boxed{I = \$45}$

b) Describe an advantage to choosing each option.

Option A → shorter investment time with a higher earning/year

option B → More money earned in total

2. Calculate the simple interest earned on each investment:

a) $500 for 6 months at 8% per year

$I = 500 \times 0.08 \times (6 \div 12)$

$\boxed{I = \$20}$

b) $1000 for $2\frac{1}{2}$ years at 3% per year

$I = 1000 \times 0.03 \times 2.5$

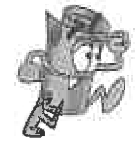
$\boxed{I = \$75}$

c) $450 for 6 years at $6\frac{1}{4}$% per year

$I = 450 \times 0.0625 \times 6$

$\boxed{I = \$168.75}$

FL: Accounts & Interest Assignment



Do all work on a separate piece of paper. Show all your work.

1. Serina verifies her bank statement for the month of March.

Bank statement for the Period March 1 to March 31				
Date	Transaction	Debit	Credit	Balance
Mar 1	Balance			256.00
Mar 1	Deposit		120.00	376.00
Mar 3	Debit	25.00		351.00
Mar 3	Debit	20.00		331.00
Mar 10	ATM withdrawal	25.00		306.00
Mar 10	ATM charge	3.75		302.25
Mar 10	Bank machine fee	1.50		300.75
Mar 20	Interior golf	65.00		235.75
Mar 31	Service fee	35.00		200.75
Mar 31	Interest		0.02	200.77

   a. What was the opening balance?
   b. How many credit transactions did Serina do in March?
   c. How many debits did Serina do in March?
   d. What is the sum of the debits for the month?
   e. What does the amount of $35.00 represent?

2. A bank charges $13.50 per month for managing an account. The account fee allows 10 free transaction each month. Additional transactions are $1.25 each. Determine the monthly service charge for the following number of transactions:

   a) 11 b) 20 c) 8 d) 0

3. Merv deposits $200.00 into an account for 5 years earning 3% per year.
   a. Calculate the amount of simple interest.
   b. Does Merv keep the interest or pay it? Explain.

4. Deanna borrows $130.00 from a relative to help buy some items for her dance project. Deanna is charged 1% interest per year and has 2 years to pay the money back.
   a. Calculate the amount of simple interest?
   b. Who received the interest amount? How much money will that person receive?

5. A bank charges $9.75 per month for managing an account. Additional transactions are charged $1.25 each. How many additional transactions were there if the total service charge was $14.75?

6. Determine the simple interest earned on a $1200.00 investment with a 2% interest rate per year,
   a. after the following time periods:
      i. 26 weeks
      ii. 2 months
      iii. 39 weeks
      iv. 24 months
   b. How long will it take to double?

7. Write the formula used to determine the following:
   a. What principal invested at 5% simple interest per year will earn $100 in interest at the end of 2 years?
   b. What interest rate will allow $2000 to earn $120 interest in 2 years?
   c. How much time will you need to invest $1000 at a rate of 1% per year to earn $100 in interest?

8. Summer works as a tree planter. She has a bank account for each of her areas of interest. On June 21, Summer's pay of $562.09 was deposited into her primary account.
   a. Summer goes online and transfers 10% of her pay to an account for her future university studies. How much did she transfer?
   b. Summer transfers 5% of her pay to an account for gifts and charity. Calculate this amount.
   c. Summer is planning a trip to Cuba during the spring break. She puts 15% of her pay into her vacation account. How much did she transfer to this account?
   d. How much of her pay does Summer have left?

9. Suppose that at the beginning of grade 7 you decided to save $2.00/day for each of the 180 school days in the school year.

   a. How much money did you save by the end of grade 7?
   b. Assume you save the same way each year until you finish grade 12. Copy and complete the table showing how much you will save each year.
   c. How much will you save in total over the six years?
   d. Your parents offer to pay you 15% interest on the total savings as a graduation present. How much interest will you receive? How much money do you have now?
   e. To you surprise, your grandparents offer to pay you 15% of the balance that you saved in grade 7 and 15% on the new total balance at the end of each year. Will the total from your parents and grandparents be the same? Explain.

Grade	Savings
7	
8	
9	
10	
11	
12	

10. The balance at the end of 8 years on an investment of $230 that was invested at a rate of 3% is $285.20. What is the interest amount?