FL: Accounts & Interest

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 _makes_ 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 _fees_ 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 Corrine's opening balance?   Closing balance?

$10 $4.70

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

credits increase, (+) beside it, balance went up

Which one SHOULD be greater, credits or debits? Explain.

Credits, should have more money than you spend.

What do you think the account fee at the end of the month is for? Would this fee be the same every month?   →bank wants money. they need to pay for things.   ↓ should be

Why is it important for Corrine to read her bank statement each month?
    so she doesn't lose more money, track spending

Why do you think Corrine has a bank account? (What benefits does it provide?)
    not having to carry cash, more secure

Interest:

Remember, interest can relate to money __earned__ for an investment or money __owed__ 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.

$$I = Prt \rightarrow time\ (in\ years)$$

interest   principal   rate
            (amount invested   (as a decimal)
            or borrowed)

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?
    Option A: Option B:
    $$I = (300)(0.06)(1)$$ $$I = (300)(0.05)(3)$$
    $$= \$18$$ $$= \$45$$

    b) Describe an advantage to choosing each option.
    Option A: - get money back faster   Option B: - more money
              - "could" be more trustworthy   - higher chance of getting money
              - more interest (higher rate)   back.
                                                       - forced savings

2. Calculate the simple interest earned on each investment:
                    →0.5 years
    a) $500 for ⭕6 months at 8% per year   b) $1000 for $2\frac{1}{2}$ years at $6\frac{1}{4}$% per year
        $$I = Prt$$ $$I = Prt$$
        $$= (500)(0.08)(\tfrac{1}{2})$$ $$= (1000)(0.0625)(2.5)$$
        $$= \$20$$ $$= \$156.25$$

FL: Accounts & Interest Assignment

$$\frac{8x}{8} = \frac{72}{8}$$

$$x = 9$$

<u>Show all your work</u>.

1. 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.

2. 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?

3. 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   iii. 39 weeks

       ii. 2 months   iv. 24 months

   b. How long will it take to double?

4. 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?

5. 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?