

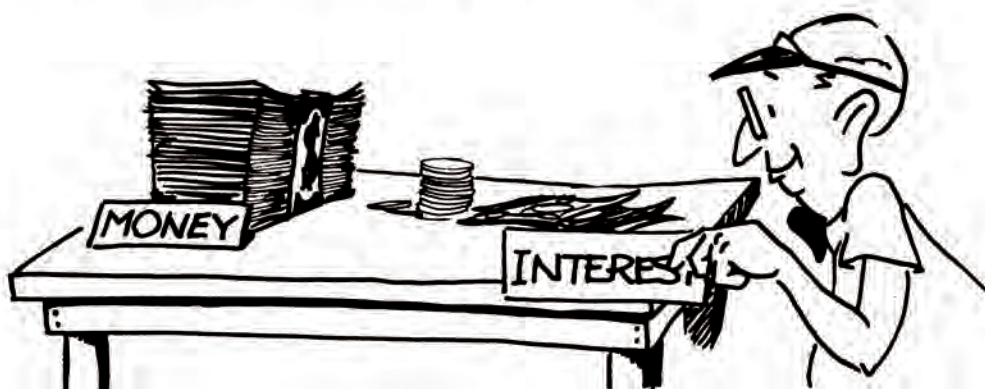


People want to save their money.

One place people save is in the bank. To save money in a bank makes more sense than to save at home because:

1. Your money is safer in a bank.
2. The bank pays you for using your money.

The money the bank pays you is called **interest**.



When you save your money in a bank, you put your money in a **savings account**. The bank will use the money in your savings account until you ask for it back. Then they must give it to you.

interest

In the meantime, the bank is paying you $\left\{ \begin{array}{l} \text{interest.} \\ \text{wages.} \end{array} \right.$

The bank pays you interest because

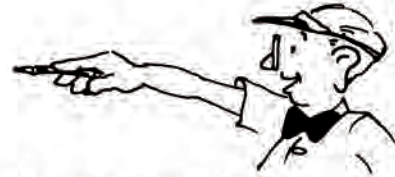
- a. it wants to help people.
- b. it is using your money.

b.

We say that your savings are **earning** interest.

Interest is usually given as a percent of the amount of money you have in the bank. If you deposit \$100.00 in a savings account that pays 5% *interest* each year, in one year your deposit will earn:

$$\begin{array}{r} \$100.00 \\ \times .05 \\ \hline \end{array}$$



\$5.00

\$105.00

So at the end of the year you will have \$_____ in your savings account. (\$100.00 + \$5.00 = ■)

.05

multiplied

In the above problem we first rewrote 5% as _____. Then we < added / multiplied > the deposit by .05 to find out the amount of interest earned in 1 year.

added

In the above problem we < added / multiplied > the deposit and the total interest earned to find out how much money you will have in your account at the end of the year.

Find the amount of interest for one year on the following deposits.

The rate of interest earned is 4% a year.

$$\begin{array}{r} \$75.00 \text{ deposit} \\ \times .04 \\ \hline \end{array}$$

\$3.00

The interest rate here is $4\frac{1}{2}\%$. $4\frac{1}{2}\% = .045$.

$$\begin{array}{r} \$176.00 \text{ deposit} \\ \times .045 \\ \hline \end{array}$$

\$7.92

Even though the **interest rate** on savings accounts is usually given for one year, the interest is usually figured out *more than once a year*.

Janis Brown has a savings account at the Citizen's Bank. The bank pays 4% interest a year, **compounded quarterly**.

A quarter of a year is 3 months. **Compounded quarterly** means the bank figures your interest every 3 months. Every 3 months the bank adds an interest payment to your savings account.



The bank pays 4% interest a year. A quarter of 4% is ____%. (Hint : $\frac{1}{4} \times 4\% = \blacksquare\%$.)

1%

The **balance** is the amount of money Janis has in her account.

Every 3 months, the bank adds 1% of Janis' balance to her account. Janis started her account on January 1st with a deposit of \$100.00. During the rest of the year, she neither deposited nor withdrew any money. At the end of the first quarter (January, February, *March*), the bank added ____% of \$100.00 to the balance.

$$\begin{array}{r} \$100.00 \\ \times .01 \\ \hline \end{array}$$



1%

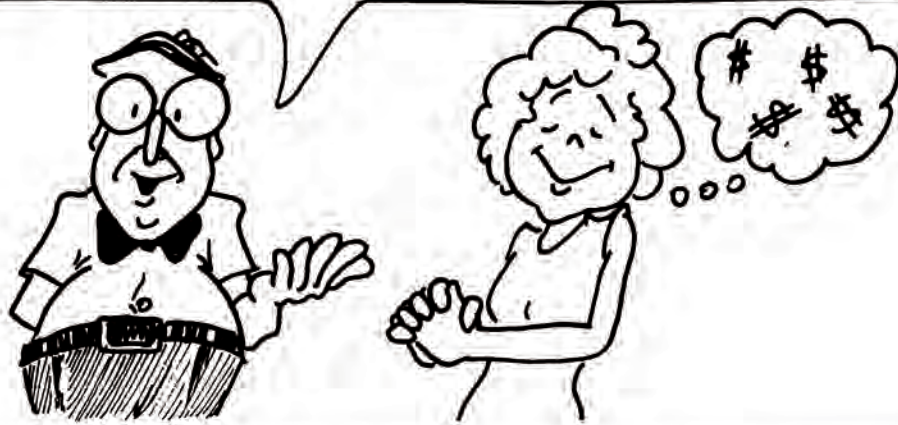
\$1.00

At the end of the first quarter, Janis' new balance was \$_____. ($\$100.00 + \$1.00 = \blacksquare$)

\$101.00

1%

At the end of the next quarter (April, May, *June*), the bank added 1_____ of \$101.00 to the balance. Her new balance was \$102.01.



1%

At the end of the next quarter (July, August, *September*), the bank added _____% of \$102.01 to Janis' balance:

\$1.02

$$\begin{array}{r}
 \$102.01 \\
 \times .01 \\
 \hline
 \$\underline{.0201}
 \end{array}$$

(.0001 is so small that we can simply drop it.)

\$103.03

On September 30, Janis' new balance was \$_____.
(\$102.01 + \$1.02 = ■)

\$1.03

At the end of September, Janis Brown had a savings account balance of \$103.03. At the end of the next quarter (October, November, *December*), the bank added 1% to make the balance:

$$\begin{array}{r}
 \$103.03 \\
 \times .01 \\
 \hline
 \$\underline{1.0303}
 \end{array}$$

(Again, we can simply drop the last two digits.)

\$104.06

At the end of the year, Janis' balance was \$_____.
(\$103.03 + \$1.03 = ■)