Section 3.3: Savings Accounts Read pg. 131-132

- Savings account: An account in which the bank pays interest for the use of the money deposited in the account.
- Interest: A percentage of the money that is in an account that a bank pays on some accounts.
- Interest Rate: The percentage rate that is paid by a bank on money that is in some accounts.
- Principal: The balance, or amount of money, in an account, or amount borrowed.

- <u>Simple Interest:</u> Interest that is calculated on the principal in an account, using the formula, I = prt.
- Simple Interest Formula: The formula I = prt, where p is principal, r is the interest rate, and t is the time in years.
- Statement Savings: An account where a consumer receives a monthly statement showing all activity, including deposits, interest earned, and any fees.

- Minimum Balance: A certain amount of money that must be kept in an account as required by that particular bank.
- Money Market Account: An account that pays a higher interest rate than other types of accounts, but usually requires a higher initial deposit and a higher minimum balance requirement often with a limit on the number of transactions per month.

Certificate of Deposit (CD): A certificate that states there is a specific sum of money on deposit and guarantees the payment of a fixed interest rate after a certain period of time, usually seven days to ten years; deposits and withdrawals cannot be made with a CD.

Maturity: A specified date at which interest is paid on a CD.

1. Gary deposits \$3,700 in an account that pays 2.15% simple interest. He keeps the money in the account for three years, but doesn't make any deposits or withdrawals. How much interest will he receive after the three years?

$$p \times r \times t = I$$

$$3,700 \times 2.15\% \times 3 = I$$

$$3,700 \times .02/5 \times 3 = 238.65$$

After 3 years, Gary will recieve _____ in interest.

Write the percent as a decimal.

$$T = ?$$
 $P = 3700$
 $C = 2.15\%$
 $C = 3$

2. What simple interest rate, to the nearest tenth, is needed for \$15,000 to double in 8 years?

When \$15,000 doubles, it becomes 3000 This means the account would earn

in interest.
$$T = P + C$$

The simple interest rate needed is

$$T = 15000$$
 $P = 15000$
 $r = 7$
 $t = 8$

Write the decimal as a percent.

$$15000 = 15000 (r) \cdot (8)$$

$$15000 = 120000 r$$

$$120000$$

$$1 = 12.5 = 12.5 \%$$

3. How much simple interest would \$1,500 earn in 11 months at an interest rate of 3.75%?

$$T = Prt \qquad T = ?$$

$$T = 1500(.0375)(\frac{11}{12}) \qquad P = 1500$$

$$r = 3.75\% \Rightarrow 100$$

$$T = \frac{1}{12}$$

4. Jesse estimates that it will cost \$300,000 to send his newborn son to a private college in 18 years. He currently has \$65,000 to deposit in an account. What simple interest rate would he need so that \$65,000 grows into \$300,000 in 18 years? Round to the nearest percent.

$$T = Prt$$

$$235000 = 65000(r)(18)$$

$$235000 = 1,170,000r$$

5. How much principal would you have to deposit to earn \$700 simple interest in $1\frac{1}{2}$ years at a rate of 4%?

$$T = Prt$$

$$700 = P(.04)(1.5)$$

$$700 = .06P$$

$$P=11.666.67$$

$$T = 700$$
 $P = P.$
 $r = 4\% \rightarrow .04$
 $t = 1.5$

7. How much simple interest would \$1,000 earn in 275 days at an interest rate of 4.21%? (There are 365 days in a year.)

$$T = Prt \qquad T = ?$$

$$T = 1000(.6421)(\frac{275}{365})P = 1000$$

$$T = 4.21\%$$

$$t = 275$$

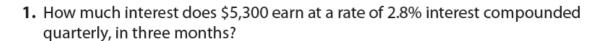
$$\frac{1}{365}$$

Section 3.4: Explore Compound Interest Read pg. 137

- Compound Interest: Interest that is earned on the money deposited into an account plus previous interest.
- Annual Compounding: A method for calculating interest so that it is paid once a year.
- Semiannual Compounding: A method for calculating interest so that it is paid twice a year, or every six months.
- Quarterly Compounding: A method for calculating interest so that it is paid four times a year, or every three months.

<u>Daily Compounding:</u> A method for calculating interest so that it is paid daily.

<u>Crediting:</u> Interest that is compounded daily but is paid either quarterly or semiannually.



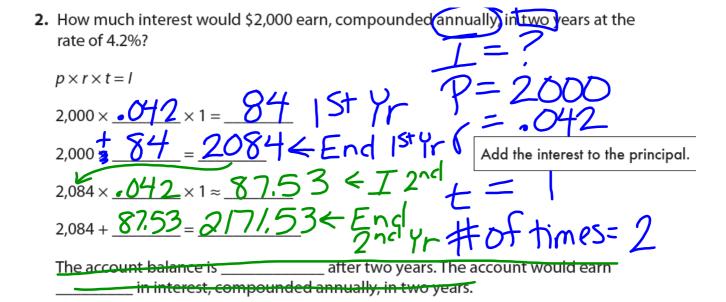
$$p \times r \times t = I$$

For interest compounded quarterly, t = 0.25.

 $5,300 \times 2.8\% \times 0.25 = 1$

Write the percent as a decimal.

In 3 months, the account earns



3. Margaret deposits \$1,000 in a savings account that pays 5.4% interest compounded semi-annually. What is her balance after one year?

$$T = Prt$$

$$T = 1000(.054)(.5) = 27$$

$$T = .054$$

$$t = .5$$

$$1000 + 27 = 1027$$

$$t = .5$$

$$T = 1027(.054)(.5) = 27.73$$
#of times = 2

4. Jonathan deposits \$6,000 in a savings account that pays 3.2% interest compounded quarterly. What is his balance after one year?

$$T = 6000(.032)(.25) = 48$$
 $B = 6000 + 48 = 6048$
 $T = 6000 + 48 = 6048$

5. How much interest would \$1,000,000 earn at 5% compounded daily, in one day?

 $I = 1,000,000(.05)(\frac{1}{365})$ I = 136.99

P = 1,000,000 r = .05

#oftimes= 1

6. Kristin deposited \$9,000 in an account that has an annual interest rate of 4.1% compounded monthly. How much interest will she earn at the end of one month?

$$I = 9000(.041)(\frac{1}{12})$$
 $I = 9000$
 $I = 30.75$
 $I = .041$
 $I = .041$

7. Kelly has d dollars in an account that pays 3.4% interest compounded weekly. Express

her balance after one week algebraically.

$$d(.034)(\frac{1}{52}) + d$$

$$T = 7$$
 $P = 4$
 $P = .634$
 $t = .52$
 $t = .65$

Homework: pg. 135-136: 2,3,5,7-11 & pg. 141: 2-4,6-8