

Advanced Mathematical Decision Making

Unit 6: Decisions in Finance

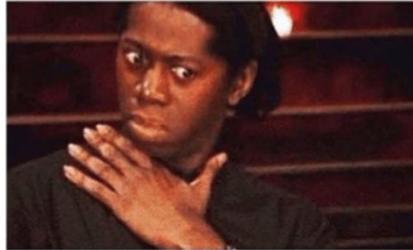


About to check bank account

Me: "I'm guessing I should probably have about \$200 left"

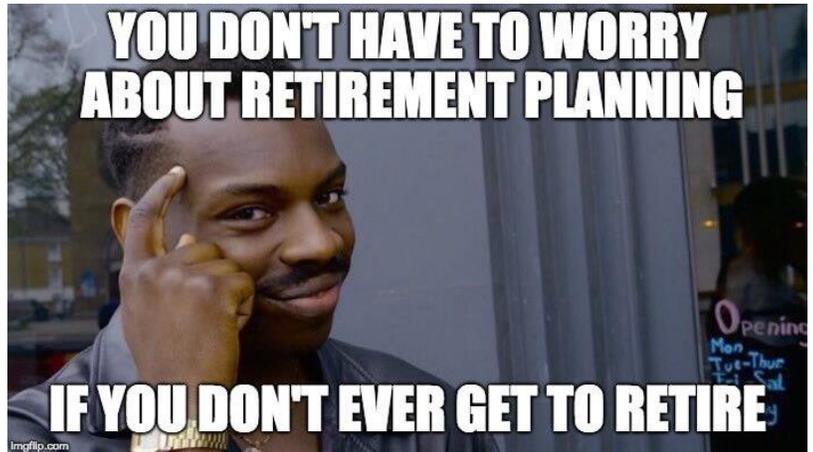
Bank account: \$3.62

Me:



Name: _____

Dr. Oldham Fall 2019



5-2 Pay Periods and Hourly Rates

Never confuse the size of your paycheck with the size of your talent.

—Marlon Brando, actor

Objectives

- Compute weekly, semi-monthly, and bi-weekly earnings given annual salary.
- Compute hourly pay and overtime pay given hourly rate.
- Compute annual salaries based on annual percentage increases.

Key Terms

- direct deposit
- hourly rate
- regular hours
- overtime hours
- overtime hourly rate
- inter- and intra- overtime
- double time pay
- gross pay
- annual percentage

Warm-Up

Solve each literal equation for x .
Isolate x on one side of the equation.

- a. $rx = t$ a. $x = \frac{t}{r}$ b. $x = \frac{(r+t)}{r}$
- b. $1.5x = r + t$ b. $x = \frac{r+t}{1.5}$
- c. $1.5(x + r) = 9$ c. $x = \frac{9 - 1.5r}{1.5}$

EXAMINE THE QUESTION

Most paychecks today are computer generated. Even so, encourage students to check their paychecks, because computer software does not always prevent errors. They also need to know about labor laws in their industry. Even part-time student jobs are protected by labor laws.

Tell students about Department of Labor postings that legally must be present in the workplace. The postings list labor laws specific to each industry. Those laws have to do with pay rates, hours, overtime, breaks, and job safety.

What Do You Need to Know to Make Sure Each Paycheck Is Correct?

Everybody looks forward to payday. Most high school students who work are paid on a *weekly* basis, which means they receive a paycheck for every week they work. Their paydays usually fall on the same day each week. However, not all jobs have a pay period of 1 week.

There are 52 weeks in a year. Some employees receive a paycheck every two weeks. They receive 26 paychecks per year. These people are paid *biweekly*. Their paydays fall on the same day of the week every other week. Businesses that distribute paychecks biweekly save time, money, and paperwork compared to businesses that pay their employees weekly.

Some businesses pay their employees twice a month, or *semi-monthly*. There are 12 months in a year, so these employees receive 24 paychecks per year. The paychecks are distributed on the same dates each month. For example, an employer may choose to pay employees on the 1st and 15th of each month. Note that biweekly and semi-monthly payment schedules are slightly different.

Although it is not common, some businesses pay their employees *monthly*. These employees receive 12 paychecks per year. They are usually paid on the same date of each month, for example, the 15th.

Most employers offer their employees **direct deposit**. This means their paycheck amounts are automatically deposited electronically into their bank accounts on payday. Even if an employee has direct deposit, they still receive a paper or digital pay stub explaining tax information for that pay period.

Most part-time jobs that students hold pay a set amount for each hour they work, called the **hourly rate**. Many people in full-time jobs are also paid at an hourly rate.

Certain jobs require the employee to work only a specific number of hours per week. These are the employee's **regular hours**. Employees sometimes work more hours than their regular hours. When these extra hours are more than the full-time number of hours, they are called **overtime hours**. The **overtime hourly rate** is usually greater than the hourly rate for the regular hours. Often the overtime rate is $1\frac{1}{2}$ times the regular hourly rate, called **time-and-a-half overtime**. Sometimes the overtime rate is two times the hourly rate, called **double-time pay**. Your total pay, which is the sum of your hourly pay and your overtime pay, is your **gross pay**.

There are federal and state laws on the lowest hourly rate that can be paid to an employee in the United States. This rate is the **minimum wage**. Other laws involve the number of hours employees can work and conditions in the workplace. It is important to have a clear understanding of your rights and responsibilities as an employee.

CLASS DISCUSSION

Highlight the difference between semimonthly and biweekly pay periods. Discuss advantages of direct deposit. Ask students if any of their jobs offer direct deposit.

TEACH

After completing the following examples, students should be able to start to check their own gross pay.

Skills and Strategies

Here you learn how to make computations involving different pay periods and hourly rates. When you take a job, be sure to ask about everything you need to know regarding your paycheck.

EXAMPLE 1

Christina is paid biweekly. Her annual salary is \$37,000. What is her biweekly salary, rounded to the nearest cent?

SOLUTION There are 26 biweekly paychecks per year.

Christina divides her annual salary by the number of paychecks to compute her weekly salary.

$$37,000 \div 26 = 1,423.08$$

Christina earns \$1,423.08 per biweekly pay period.

Carlos earns x dollars biweekly. Express his annual salary algebraically.

EXAMPLE 2

Manny is paid semimonthly. His semimonthly salary is \$1,239. What is his annual salary?

SOLUTION Manny receives 24 paychecks per year.

He multiplies the monthly amount by the number of paychecks to calculate his annual salary.

$$1,239 \times 24 = 29,736$$

Manny's annual salary is \$29,736.

Alex is paid semimonthly. His annual salary is y dollars. Express his semimonthly salary algebraically.

EXAMPLE 1

It is common for students to mix up biweekly and semimonthly pay periods. If they know that there are 52 weeks in a year and 12 months in a year, they can figure out the correct number of paychecks. Some may choose to memorize the number of annual paychecks.

CHECK YOUR UNDERSTANDING

Answer 26x

Check Your Understanding

EXAMPLE 2

Remind students to use their number sense as they compute salaries. If they press an incorrect number into the calculator, or use an incorrect operation, they can get unreasonable answers.

CHECK YOUR UNDERSTANDING

Answer $\frac{y}{24}$

Check Your Understanding

EXAMPLE 3

Point out that regular hours are often 40 hours per week, but it can differ from industry to industry. There are also child labor laws for students, restricting the number of hours they can work. Students can up those laws online.

CHECK YOUR UNDERSTANDING

Answer 52hd

Check Your Understanding 

EXAMPLE 3

Maureen is a manager at a local Chicken King restaurant. Her regular hourly wage is \$15.70. If she regularly works 40 hours per week, what is her regular weekly pay?

SOLUTION

Multiply the hours worked by the hourly wage.

$$15.70 \times 40 = 628$$

Maureen's regular weekly pay is \$628.00.

EXAMPLE 4

Students will have many chances to compute time and-a-half rates for overtime work, so they should get used to multiplying the hourly rate by 1.5.

CHECK YOUR UNDERSTANDING

Answer 1.5y

Check Your Understanding 

Roger regularly works h hours per week at a rate of d dollars per hour. Express his annual salary algebraically.

EXAMPLE 4

If Maureen from Example 3 works overtime, she receives an hourly rate of $1\frac{1}{2}$ times her regular hourly rate. What is Maureen's hourly overtime rate?

SOLUTION

Multiply her hourly rate by $1\frac{1}{2}$, which is 1.5 as a decimal.

$$15.70 \times 1.5 = 23.55$$

Maureen's hourly overtime rate is \$23.55.

EXAMPLE 5

A solid understanding of Example 5 will ensure that students can handle literal algebraic versions in similar problems, as in the Check Your Understanding problem.

CHECK YOUR UNDERSTANDING

Answer $40x + 1.5xy$

Check Your Understanding 

EXAMPLE 5

Janice earns \$16 per hour. If her regular hours are 40 hours per week, and she receives time-and-a-half overtime, find her total pay for a week in which she works 45 hours.

SOLUTION

Find her regular pay for the 40 regular hours.

$$40 \times 16 = 640$$

Subtract to find the number of overtime hours.

$$45 - 40 = 5$$

Her overtime rate is 1.5 times the hourly rate.

$$16 \times 1.5 = 24$$

Multiply the overtime hourly rate by the number of overtime hours to find the overtime pay.

$$24 \times 5 = 120$$

Add her regular pay to her overtime pay.

$$640 + 120 = 760$$

Janice earned \$760 for her 45 hours of work.

Ron regularly works 40 hours per week, at a rate of x dollars per hour. Last week he worked y overtime hours at time-and-a-half. Express his total weekly salary algebraically.

EXAMPLE 6

Samantha, a waitress, worked her 40 regular hours last week, plus 7 overtime hours at the time-and-a-half rate. Her gross pay was \$611.05. What was her hourly rate?

SOLUTION Let x represent the hourly rate. Her regular pay is $40x$. Her overtime rate is $1.5x$. Her overtime pay is $7(1.5x)$.

	$\text{Regular pay} + \text{Overtime pay} = \text{Total pay}$
Substitute.	$40x + 7(1.5x) = 611.05$
Simplify.	$40x + 10.5x = 611.05$
Combine like terms.	$50.5x = 611.05$
Divide each side by 50.5.	$x = 12.10$

Samantha's regular hourly rate is \$12.10.

Jillian worked her 40 regular hours last week, plus 2 overtime hours at a double-time rate. Her gross pay was \$484. What was her hourly rate?

EXAMPLE 7

Last week, Saul worked r regular hours and t overtime hours at a time-and-a-half rate. He earned \$700. If x represents his hourly rate, express x in terms of r and t .

SOLUTION Regular gross pay is rx . Total overtime pay is $t(1.5x)$.

	$\text{Regular pay} + \text{Overtime pay} = \text{Total pay}$
Substitute.	$rx + t(1.5x) = 700$
Remove the parentheses.	$rx + 1.5tx = 700$
Factor out x .	$x(r + 1.5t) = 700$
Divide each side by $(r + 1.5t)$.	$x = \frac{700}{r + 1.5t}$

Saul's hourly rate can be represented by $\frac{700}{r + 1.5t}$.

Jonathan worked h hours at an hourly rate of r dollars. He also worked w hours at an overtime rate of double time. Express his total pay for the week algebraically.

Jovanna gets paid a regular-pay rate of r dollars for 40 hours worked. She is paid at a time-and-a-half rate for up to 16 overtime hours worked and a double-time rate for any overtime hours worked greater than 16 hours. Write a piecewise function, $D(z)$, for Jovanna's pay when she works z hours. See Additional Answers.

EXAMPLE 6

If students had trouble with Example 5, do not do Example 6 until their difficulties are cleared up.

CHECK YOUR UNDERSTANDING

Answer \$11

Notice that the overtime rate in this problem differs from Examples 5 and 6 because it involves double time.

 **Check Your Understanding**

EXAMPLE 7

This is an algebraic model in Example 6. Refer to Example 6 as you work through this example.

CHECK YOUR UNDERSTANDING

Answer $hr + 2rw$

 **Check Your Understanding**

 **Extend Your Understanding**

EXAMPLE 8

This example serves as a spiraling review of the concept of geometric series. You should review what the common ratio is.

CHECK YOUR UNDERSTANDING

Answer \$85,070.00

EXAMPLE 8

Michaela signed a 5-year contract for a new job. Her starting salary is \$67K per year, and the salary increases 3% each year if a corporate review of her work deems it satisfactory. What is her salary in 5 years, to the nearest dollar?

SOLUTION This is an example of a geometric series with first term 67,000 and common ratio 1.03.

Use the formula for the n th term of a geometric series from Section 4.6.

$$a_n = a_1(1 + r)^{n-1}$$

Substitute.

$$a_5 = 67,000(1.03)^{5-1}$$

$$a_5 = 67,000(1.03)^4$$

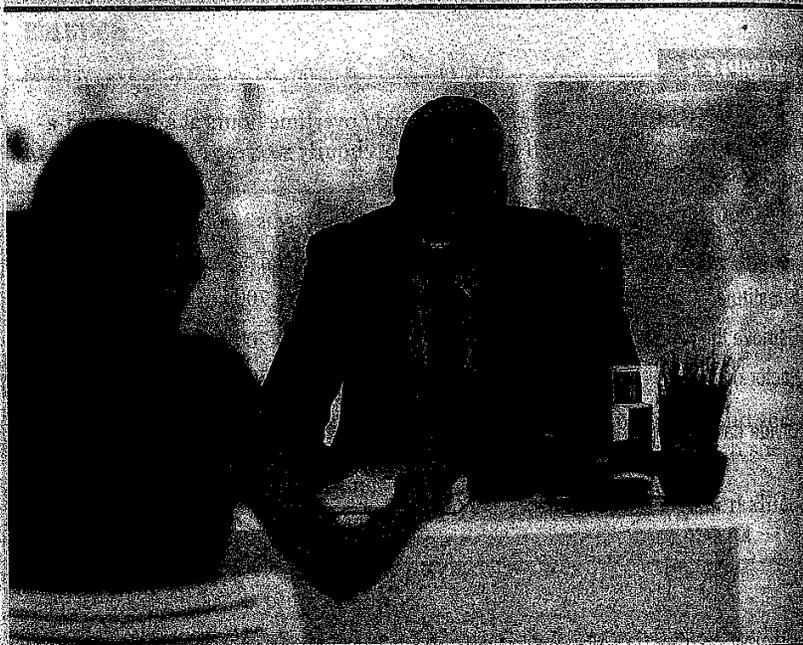
Simplify.

$$a_5 \approx 75,409.$$

Michaela's fifth-year salary will be approximately \$75,409.

Check Your Understanding

If Michaela signs a new 3-year contract after her first 5 years, with a 4.1% annual increase, what will her salary be in her 8th year with the company?



Applications

Never confuse the size of your paycheck with the size of your talent.

—Marlon Brando, actor

1. Interpret the quote in the context of what you've learned about jobs and salaries.
2. Yoko is paid semimonthly. How many fewer paychecks does she receive in a year compared to someone who is paid weekly?
3. Sean is paid biweekly. His annual salary is \$42,500. What is his biweekly salary to the nearest cent?
4. Cynthia's semimonthly salary is \$1,371.50. What is her annual salary?
5. Baseball player Alex Rodriguez earned \$20,000,000 in 2016. He played in 65 games. What was his salary per game to the nearest thousand dollars?
6. Ceil gets paid biweekly. Her biweekly salary is \$1,763.28. What is her annual salary?
7. John's weekly salary is \$478.25. His employer is changing the pay period to semimonthly.
 - a. What is John's annual salary?
 - b. What will John's semimonthly salary be to the nearest cent?
8. Ralph earns \$72,000 annually as an architect and is paid semimonthly. Alice also earns \$72,000 but she is paid biweekly.
 - a. How many more checks does Alice receive in a year when compared to Ralph?
 - b. What is the difference between Ralph's semimonthly salary and Alice's biweekly salary? Round to the nearest cent.
9. Last year Beth's annual salary was \$38,350. This year she received a promotion and now earns \$46,462 annually. She is paid biweekly.
 - a. What was her biweekly salary last year? Round to the nearest cent.
 - b. What is Beth's biweekly salary this year? Round to the nearest cent.
 - c. On a biweekly basis, how much more does Beth earn as a result of her promotion?
10. Justin is a golf pro. He works 8 months per year, and is paid \$76,000. During the winter months, he teaches golf privately and earns another \$12,500. What is his average monthly salary based on his total yearly earnings?
11. Last year Nancy's annual salary was x dollars. This year she received a raise of y dollars per year. She is paid semimonthly.
 - a. Express her semimonthly salary last year algebraically.
 - b. Express her semimonthly salary this year algebraically.
 - c. On a monthly basis, how much more does Nancy earn as a result of her raise?
12. Hector works in a gas station and earns \$15.50 per hour. Last week he worked 29 hours. What was his gross pay?
13. Eddie works at Beep-N-Kleen car wash. He earns \$15 per hour. Last week he worked x hours at this rate. Express his gross pay algebraically.

14. Lynn regularly works a 40-hour week and earns \$16 per hour. She receives time-and-a-half pay for each hour of overtime she works. Last week she worked 43 hours.
- What was her regular gross pay?
 - What was her hourly overtime rate?
 - What was her overtime pay?
 - What was her total pay for the week?
15. Amy regularly works 20 hours per week at Pook's Dry Cleaners from Monday through Friday. She earns \$15.50 per hour and receives double-time pay for working Sundays. Next week she will work her regular 20 weekday hours, and an additional 8 hours on Sunday. What will her total pay be for the week?
16. Tom earns \$15.50 per hour at the Yankee Bowling Alley. He regularly works 40 hours per week. He is paid time-and-a-half for each hour of overtime work. Last week he worked 42 hours. What was his gross pay for the week?
17. Pedro works 35 regular hours per week at the Meadow Deli. His hours over 35 are considered overtime. He earns \$15 per hour and receives time-and-a-half pay for each hour of overtime he works. Last week he worked 41 hours and received a gross pay of \$305.80. This amount is incorrect. How much does Pedro's boss owe him?
18. Colby and Cheryl work in different local factories. Colby regularly earns \$18 per hour, and he is paid time-and-a-half for each hour of overtime he works. Cheryl regularly earns \$16.60 per hour, and she is paid double time for an hour of overtime. Who earns more for one hour of overtime? How much more?
19. Ron earns x dollars per hour. He regularly works 40 hours per week. Express his annual salary algebraically.
20. Michael earns \$21 per hour and works 40 hours per week. How many overtime hours would he have to work in a week for his time-and-a-half overtime pay to be greater than his regular gross pay?
21. Jim worked 40 regular hours last week, plus 8 overtime hours at the time-and-a-half rate. His gross pay was \$884.
- What was his hourly rate?
 - What was his hourly overtime rate?
22. Julianne works as a waitress. She earns \$13 per hour plus tips.
- Today she worked x hours. Express her pay for these hours algebraically.
 - She served nine tables. The total bill for these nine tables was y dollars. Julianne received 18% in tips from these bills. Express the amount she received in tips algebraically.
 - Express Julianne's total earnings for the day algebraically.
23. Manuel works at Cheesecake King. He earns \$15 per hour as a busboy. The waiters he helps give him 25% of their tips.
- If Manuel worked 6 hours today, how much did he earn, without tips?
 - The waiters Manuel assisted waited on 16 tables, and the total bill from all these tables was \$1,188. The waiters earned 15% in tips, and gave 25% of these earnings to Manuel. How much did Manuel make in tips?
 - What was Manuel's total salary for the day?
 - What were Manuel's average earnings per hour, including tips? Round to the nearest cent.
24. Max works x hours per week and has a 3-week vacation each year. Mindy works y hours per week and has a 4-week vacation each year. Express their combined number of work hours per year.

Salary vs. Hourly vs. Commission Jobs

1. What are some factors you need to consider before selecting a job?



Kafi just graduated college and currently has three job offers in educational publishing. (WOW! Three offers! Nice!)

SALARY	HOURLY	COMMISSION
Editor	Designer	Sales Representative
Full time position with an annual salary of \$37,500	Full time position with an hourly wage of \$26.50. This job assumes standard five days a week for 8 hours each day	All salary is based off of sales. 5% commission off of total sales. Typical sales representatives sell \$100,000 per month.

2. Before we start looking in depth at each of these offers, which one would you select right now and why?

3. Unlike part time jobs that you have right now, most careers pay monthly not bi-weekly so we need to compare each of these jobs based on their monthly salary. Show work in the table below

MONTHLY SALARY (PRE-TAX)		
SALARY	HOURLY	COMMISSION

4. Hey guess what? You forgot about taxes! We need to take taxes out of our monthly salary to determine our **post-tax** salary. Here are the current tax withholdings. 7.65% is withheld for FICA (social security and medicare) Income tax varies on what tax bracket you fall into (with higher incomes paying more and lower incomes paying less) but typically 22% of your paycheck will be withheld for federal income tax. Georgia income tax varies as well but the median income tax withheld is 3%.

Tax Rate	Individuals
10%	Up to \$9,525
12%	\$9,526 to \$38,700
22%	\$38,701 to \$82,500
24%	\$82,501 to \$157,500

MONTHLY SALARY (POST-TAX)		
SALARY	HOURLY	COMMISSION

5. Based on his current living situation, Kafi determine that he needs \$3,000 a month to cover all of his expenses (rent, car, utilities, food, entertainment, savings, etc.). What job would you suggest Kafi take now? Why?
6. Take home salary is not the only factor in comparing jobs. It is also VITAL to look at the benefits that a job offers.

BENEFITS		
SALARY	HOURLY	COMMISSION
<ul style="list-style-type: none"> • Health Insurance- \$65 per month • Retirement plan- \$200 per month • Life Insurance- free (paid for by company) • Given 15 days of Paid Time Off (PTO) per year 	<ul style="list-style-type: none"> • Health Insurance- \$125 per month • Retirement plan- \$200 per month • Life Insurance- \$35 per month • Given 8 days of Paid Time Off (PTO) per year 	<ul style="list-style-type: none"> • Health Insurance- \$160 per month • Retirement plan- \$300 per month • Life Insurance- \$35 per month • Given no days of Paid Time Off (PTO)

– **Paid Time Off** can be used for sick days or vacation days without you losing income. For example, if you didn't have any PTO and took a week-long vacation then you would lose income for an entire week (which would mean you make a lot less in your check that month). If you have PTO and use it, then essentially the company is paying you for working even though you are not working. So you do not lose that income –

Kafi knows that he is taking a week off (5 days- a *work* week) in December to visit his family and another week off (again 5 days) in June for a cruise. Also during the course of the year he averages about three sick days. So overall he needs to plan for 13 days of not being in work.

Based on the benefits above, and knowing that Kafi needs to account for 13 days off, calculate the **take-home** monthly salary. Take-home salary refers to the money that you actually get in your account each month after taxes, insurance, retirement and savings are accounted for.

MONTHLY TAKE-HOME SALARY		
SALARY	HOURLY	COMMISSION

7. Which job do you recommend for Kafi to take and why?

8. Did the benefits offered affect your decision? Why or Why not?

9. What other things/benefits would you consider before accepting a job?



EXTENSION: Sabrina also just graduated college and has two job offers.

SALARY	HOURLY- contract/self-employed
\$55,000 annual salary	\$29 per hour (assumes standard 5 day, 8 hour work week)

MONTHLY SALARY (PRE-TAX)	
SALARY	HOURLY- contract/self-employed

Assume that Sabrina lives in Georgia as well and use the same tax information as Kari to determine her post-tax monthly incomes but since the hourly job is self-employed it has separate tax laws and is taxed an *additional* 7.65%.

MONTHLY SALARY (POST-TAX)	
SALARY	HOURLY- contract/self-employed

10. Before benefits are considered which job would you suggest for Sabrina and why?

BENEFITS	
SALARY	HOURLY- contract/self-employed
<ul style="list-style-type: none"> • Health Insurance- \$95 per month • Retirement plan- 4% of after-tax monthly income • Life Insurance- free (paid for by company) • Given 10 days of Paid Time Off (PTO) per year 	<ul style="list-style-type: none"> • Health Insurance- \$150 per month • Retirement plan- 8 % of after-tax monthly income • Life Insurance- \$35 per month • Given 5 days of Paid Time Off (PTO) per year

11. Sabrina has a total of 7 days of planned vacation and like Kafi, typically takes about three sick days a year. Determine her take-home salary based on the benefits above

MONTHLY TAKE-HOME SALARY	
SALARY	HOURLY- contract/self-employed

12. Which job would you recommend for Sabrina and why?

13. As you analyzed and compared the different job offers, did your decision about which job to take change? Why? When considering various job offers, what will factor into your decision?

Saving Money: Future value of an investment

When we save money in an account, we typically deposit it with some account that will give us a percent interest. If we put a dollar into a piggy bank and never touch it again, in a year it will still only be one dollar. If we put a dollar into a savings account that is awarding us **interest** then that dollar could turn into \$1.50 in a year. How much we gain is based on the interest and the **compounding** period. Compounding period refers to how often the interest is calculated on the current amount. Below is the formula used to find the future value of an investment based on interest and compounding periods.

$$FV = PV \left(1 + \frac{i}{n} \right)^{nt}$$

What do the variables stand for?

FV	PV	i	n	t

What are the different compounding periods?

Annual	Semi-annual	Quarterly	Monthly	Weekly	Daily

- Jackson has \$2,600 he is going to deposit into a savings account with a 4.25% interest compounded quarterly. How much will he have after 5 years? How much will he have after 10 years? How much will he have after 20 years?

5 years	
10 years	
20 years	

What if the same account compounded monthly? How much would he have after each of the following years?

	Compounded Quarterly (copy answer from #1)	Compounded Monthly	Amount increase?
5 years			
10 years			
20 years			

3. What can you determine about total money saved (future value) and compounded period?

4. Kami has \$5,000 she is going to invest and has two different options

Savings account	Money Market account
<ul style="list-style-type: none"> • 3.15% interest rate • Compounded monthly 	<ul style="list-style-type: none"> • 3.98% interest rate • Compounded semi-annually

Determine Kami's account balance after the following years

	Savings account	Money Market account
5 years		
10 years		
20 years		

5. Which has a greater impact on future value, compounding period or interest rate? Why?

6. So wake-up call. Interest rates on savings accounts is muuuuuuch lower than 3%. Look up a savings account and determine the future value of a \$3,000 investment.

Bank: _____ Type of Account: _____

Interest Rate: _____ Compounding period: _____

Future value of account after 10 years: _____

How much money did you earn out of savings after 10 years? _____

7. Sometimes we like to work backwards when planning for a specific purpose. Like saving for a car, saving for college, saving for a house, or saving for retirement. Jada wants to start saving for retirement. A general rule of thumb is that you should have \$1,000,000 saved by the time you retire. Let's assume that Jada is 20 years old and plans to retire at 67. She plans on opening up a savings account that has 1.2% interest compounded quarterly. Let's assume she does not make any additional deposits into her account (Even though this is unrealistic). How much money will she need to put away right now in order to have \$1,000,000 when she retires?

8. Jesus is saving up to have a down payment on a new car when he graduates from college. He wants to have \$3,500 saved. He plans on depositing a lump sum into a CD (Certificate of Deposit) account and withdrawing it after graduation. The CD account from Bank of America offers 0.15% interest compounded monthly. If we assume he does not make any deposits or withdraws for 4 years, how much will he need to deposit now in order to have the amount needed for a down payment? (and yes, you should be surprised by that number because the interest rate is so small)

Using the TVM function on the calculator

1) [Apps] and choose finance, and 1: TVM solver

Use the tables below (which are set up exactly like the calculator) to determine what it is you are looking for. Enter all the information into your calculator. In the area you are trying to find, hit [alpha] enter and this will 'solve' that missing category for you

James wants to find the future value of an investment of \$1,000 over 5 years with an interest rate of 2.3% compounded monthly:

Variable	Definition of Variable	Value
N	Number of compounding periods between the time of investment and the time of retirement. (n*t)	
I%	Annual interest rate (as a percent)	
PV	Principal, or present value (keep negative, because it is the money you have to put in)	
PMT	Amount of each regular payment(per compounding period, like per month or per year)	
FV	Future value, or value of the investment at maturity	
P/Y	Number of payments per year (usually the same as the number of compounding periods per year C/Y)	
C/Y	Number of compounding periods per year	

How much money does Abby need to put down in principal to have 35,000 saved in 20 years at a 1.3% interest rate compounded quarterly?

Variable	Definition of Variable	Value
N	Number of compounding periods between the time of investment and the time of retirement. (n*t)	
I%	Annual interest rate (as a percent)	
PV	Principal, or present value (keep negative, because it is the money you have to put in)	
PMT	Amount of each regular payment(per compounding period, like per month or per year)	
FV	Future value, or value of the investment at maturity	
P/Y	Number of payments per year (usually the same as the number of compounding periods per year C/Y)	
C/Y	Number of compounding periods per year	

Jack wants to save up for a car. He has \$1,000 now and needs \$5,000. If he has an interest rate of 1.9% compounded monthly how long will it take him to get to \$5000?

Variable	Definition of Variable	Value
N	Number of compounding periods between the time of investment and the time of retirement. (n*t)	
I%	Annual interest rate (as a percent)	
PV	Principal, or present value (keep negative, because it is the money you have to put in)	
PMT	Amount of each regular payment(per compounding period, like per month or per year)	
FV	Future value, or value of the investment at maturity	
P/Y	Number of payments per year (usually the same as the number of compounding periods per year C/Y)	
C/Y	Number of compounding periods per year	

Let's try something more realistic. Saving interest rates are NOT at 2% they are closer to 0.05%. Try this situation which would be close to someone graduating from high school

Jane got a gift from her grandparents when she graduated high school of \$1500. She is going to keep it in her savings account until she graduates college and then is going to use that money to help with buying a house. If she keeps it in her savings account for 4 years at a 0.05% interest rate calculated monthly. How much will she have when she graduates?

Variable	Definition of Variable	Value
N	Number of compounding periods between the time of investment and the time of retirement. (n*t)	
I%	Annual interest rate (as a percent)	
PV	Principal, or present value (keep negative, because it is the money you have to put in)	
PMT	Amount of each regular payment(per compounding period, like per month or per year)	
FV	Future value, or value of the investment at maturity	
P/Y	Number of payments per year (usually the same as the number of compounding periods per year C/Y)	
C/Y	Number of compounding periods per year	

Ok, so what if Jane puts money into her savings account each month. We will have to use the PMT option. She will put away \$100 every month so put -100 in for PMT and recalculate how much she will have

Variable	Definition of Variable	Value
N	Number of compounding periods between the time of investment and the time of retirement. (n*t)	
I%	Annual interest rate (as a percent)	
PV	Principal, or present value (keep negative, because it is the money you have to put in)	
PMT	Amount of each regular payment (per compounding period, like per month or per year)	
FV	Future value, or value of the investment at maturity	
P/Y	Number of payments per year (usually the same as the number of compounding periods per year C/Y)	
C/Y	Number of compounding periods per year	

You can also use this App for Loans. Let's calculate out something all of you will need to start thinking about soon- student loans. Current in-state tuition for Kennesaw State University is about \$8,462 a year. (this assumes you are living AT HOME). Assume you go to college for 4 years. Your parents have saved a TOTAL of \$8,000 for your 4 years at college. 1) Figure out how big of a loan you will have to take out. 2) Calculate your MONTHLY payment on your student loans. Assume your loan rate is 4.53% over 10 years compounded DAILY. (PV will be how much you need in a loan, FV is 0 because obviously in the future you want to OWE 0 dollars and solve for PMT. *(The cheapest dorm will add \$6500 per year)*)

N:

I%

PV:

PMT:

FV:

P/Y:

C/Y:

The current interest rate for a 5 year car loan is about 3.99% compounded monthly (depending on your credit score and if it is a new/used car). Based on your current income you know you can make a monthly car payment of \$280. How much of a loan can you take out? (Leave PV and FV at zero and solve for PV- since this is the principal amount you can take out)

N:

I%

PV:

PMT:

FV:

P/Y:

C/Y:

TVM Solver questions

For the following problems use the TVM solver on the graphing calculators to solve.

SAVINGS:

1. What can an investor expect to receive at the end of a year if he deposits \$200 in a bank giving 10% interest compounded daily?
N:
I%:
PV:
PMT:
FV:
2. How long will it take a dollar to double at 8% compounded semiannually?
N:
I%:
PV:
PMT:
FV:
3. What amount needs to be deposited in an investment that yields 5% so that it will be worth \$600 at year end assuming it is compounded annually?
N:
I%:
PV:
PMT:
FV:
4. What can a finance teacher expect to have saved in her account if she saves (deposits) \$1,000 a year for 3 years at 5% annual interest? (Assume she started with no other money in her account)
N:
I%:
PV:
PMT:
FV:
5. A biologist deposits \$1,000 in her account at the end of each quarter for 10 years. How much money does she have at the end of 10 years if the bank pays 6% interest compounded quarterly? (Again assume that she started with no other money in her account)
N:
I%:
PV:
PMT:
FV:

LOANS

6. Your parents need to replace their roof and take out a home improvement loan to pay for it. The loan is for \$25,655 with an interest rate of 9.99% compounded monthly for 7 years. How much will their monthly payments be?

N:

I%:

PV:

PMT:

FV:

7. Tony just graduated college and needs to buy a car. After looking at his budget he realizes he can only afford a monthly payment of \$199 a month. His bank has pre-approved him for a 72 month 3.99% rate. How expensive of a car can he afford? (Assume the loan is compounded monthly)

N:

I%:

PV:

PMT:

FV:

8. Ashley got herself into some bad credit card debt. She currently owes \$3,455. Her interest on her credit card is 2.599% compounded monthly. Her minimum monthly payment is \$50. If she only makes the minimum monthly payment, how many *years* will it take her to pay off her debt? (remember that N will be in months)

N:

I%:

PV:

PMT:

FV:

9. Ashley wants to have all of her credit card debt to be paid off in 2 years. What would her monthly payment need to be?

N:

I%:

PV:

PMT:

FV:

FILING YOUR TAXES!

(the most boring/ most important lesson you will have in class)

		a Employee's social security number XXX-XX-9436		OMB No. 1545-0008	
b Employer identification number (EIN) 74-8464762		1 Wages, tips, other compensation 36,174.46		2 Federal income tax withheld 4,337.68	
c Employer's name, address, and ZIP code Super Demo System 468 Sheffield Street Atlanta, GA 39832		3 Social security wages 36,415.95		4 Social security tax withheld 2,257.80	
		5 Medicare wages and tips 36,415.95		6 Medicare tax withheld 528.03	
		7 Social security tips 0.00		8 Allocated tips 0.00	
d Control number 00023 - 1 of 1		9 0.00		10 Dependent care benefits 0.00	
e Employee's first name and initial Brenda A		Last name Watsonia		Suff. Ms	
82 Townville Road Apt 27 Greenville, GA 31759		11 Nonqualified plans 0.00		12a C 1.89	
		13 <input type="checkbox"/> Statutory employee <input checked="" type="checkbox"/> Retirement plan <input type="checkbox"/> Third-party sick pay		12b DD 5,847.69	
		14 Other EEMED 1647.66 ER401K 40.00 ERMED2 4200.03		12c Y 865.35	
f Employee's address and ZIP code		15 State Employer's state ID number GA 56-8464762		16 State wages, tips, etc. 36,335.95	
		17 State income tax 1,664.77		18 Local wages, tips, etc. 0.00	
		0.00		19 Local income tax 0.00	
		0.00		20 Locality name	

Form **W-2 Wage and Tax Statement** **2014** Department of the Treasury—Internal Revenue Service

Form **1040** Department of the Treasury—Internal Revenue Service (99) **2018** OMB No. 1545-0074 IRS Use Only—Do not write or staple in this space.

Filing status: Single Married filing jointly Married filing separately Head of household Qualifying widow(er)

Your first name and initial _____ Last name _____ Your social security number _____

Your standard deduction: Someone can claim you as a dependent You were born before January 2, 1954 You are blind

If joint return, spouse's first name and initial _____ Last name _____ Spouse's social security number _____

Spouse standard deduction: Someone can claim your spouse as a dependent Spouse was born before January 2, 1954 Full-year health care coverage or exempt (see inst.)

Spouse is blind Spouse itemizes on a separate return or you were dual-status alien

Home address (number and street). If you have a P.O. box, see instructions. _____ Apt. no. _____ Presidential Election Campaign (see inst.) You Spouse

City, town or post office, state, and ZIP code. If you have a foreign address, attach Schedule 6. _____ If more than four dependents, see inst. and here

Dependents (see instructions):		(2) Social security number	(3) Relationship to you	(4) <input checked="" type="checkbox"/> if qualifies for (see inst.):	
(1) First name	Last name			Child tax credit	Credit for other dependents
				<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>

Sign Here Under penalties of perjury, I declare that I have examined this return and accompanying schedules and statements, and to the best of my knowledge and belief, they are true, correct, and complete. Declaration of preparer (other than taxpayer) is based on all information of which preparer has any knowledge.

Your signature _____ Date _____ Your occupation _____ If the IRS sent you an Identity Protection PIN, enter it here (see inst.) _____

Spouse's signature. If a joint return, both must sign. _____ Date _____ Spouse's occupation _____ If the IRS sent you an Identity Protection PIN, enter it here (see inst.) _____

Preparer's name _____ Preparer's signature _____ PTIN _____ Firm's EIN _____ Check if: 3rd Party Designee Self-employed

Firm's name _____ Phone no. _____

Firm's address _____

For Disclosure, Privacy Act, and Paperwork Reduction Act Notice, see separate instructions. Cat. No. 11320B Form **1040** (2018)

Attach Form(s) W-2. Also attach Form(s) W-2G and 1099-R if tax was withheld.

Standard Deduction for—
 • Single or married filing separately, \$12,000
 • Married filing jointly or Qualifying widow(er), \$24,000
 • Head of household, \$18,000
 • If you checked any box under Standard deduction, see instructions.

1	Wages, salaries, tips, etc. Attach Form(s) W-2	1	
2a	Tax-exempt interest	2a	
3a	Qualified dividends	3a	
4a	IRAs, pensions, and annuities	4a	
5a	Social security benefits	5a	
2b	Taxable interest	2b	
3b	Ordinary dividends	3b	
4b	Taxable amount	4b	
5b	Taxable amount	5b	
6	Total income. Add lines 1 through 5. Add any amount from Schedule 1, line 22	6	
7	Adjusted gross income. If you have no adjustments to income, enter the amount from line 6; otherwise, subtract Schedule 1, line 36, from line 6	7	
8	Standard deduction or itemized deductions (from Schedule A)	8	
9	Qualified business income deduction (see instructions)	9	
10	Taxable income. Subtract lines 8 and 9 from line 7. If zero or less, enter -0-	10	
11	a Tax (see inst.) (check if any from: 1 <input type="checkbox"/> Form(s) 8814 2 <input type="checkbox"/> Form 4972 3 <input type="checkbox"/>)	11	
12	a Child tax credit/credit for other dependents b Add any amount from Schedule 2 and check here <input type="checkbox"/>	12	
13	Subtract line 12 from line 11. If zero or less, enter -0-	13	
14	Other taxes. Attach Schedule 4	14	
15	Total tax. Add lines 13 and 14	15	
16	Federal income tax withheld from Forms W-2 and 1099	16	
17	Refundable credits: a EIC (see inst.) b Sch. 8812 c Form 8863 Add any amount from Schedule 5	17	
18	Add lines 16 and 17. These are your total payments	18	
19	If line 18 is more than line 15, subtract line 15 from line 18. This is the amount you overpaid	19	
20a	Amount of line 19 you want refunded to you . If Form 8888 is attached, check here <input type="checkbox"/>	20a	
20b	Routing number	20b	
20c	Type: <input type="checkbox"/> Checking <input type="checkbox"/> Savings	20c	
20d	Account number	20d	
21	Amount of line 19 you want applied to your 2019 estimated tax	21	
Amount You Owe	22 Amount you owe . Subtract line 18 from line 15. For details on how to pay, see instructions	22	
23	Estimated tax penalty (see instructions)	23	

Go to www.irs.gov/Form1040 for instructions and the latest information.

2018 Tax Table — Continued

If line 10 (taxable income) is—		And you are—				If line 10 (taxable income) is—		And you are—				If line 10 (taxable income) is—		And you are—			
At least	But less than	Single	Married filing jointly *	Married filing separately	Head of a household	At least	But less than	Single	Married filing jointly *	Married filing separately	Head of a household	At least	But less than	Single	Married filing jointly *	Married filing separately	Head of a household
		Your tax is—						Your tax is—						Your tax is—			
21,000						24,000						27,000					
21,000	21,050	2,333	2,142	2,333	2,251	24,000	24,050	2,693	2,502	2,693	2,611	27,000	27,050	3,053	2,862	3,053	2,971
21,050	21,100	2,339	2,148	2,339	2,257	24,050	24,100	2,699	2,508	2,699	2,617	27,050	27,100	3,059	2,868	3,059	2,977
21,100	21,150	2,345	2,154	2,345	2,263	24,100	24,150	2,705	2,514	2,705	2,623	27,100	27,150	3,065	2,874	3,065	2,983
21,150	21,200	2,351	2,160	2,351	2,269	24,150	24,200	2,711	2,520	2,711	2,629	27,150	27,200	3,071	2,880	3,071	2,989
21,200	21,250	2,357	2,166	2,357	2,275	24,200	24,250	2,717	2,526	2,717	2,635	27,200	27,250	3,077	2,886	3,077	2,995
21,250	21,300	2,363	2,172	2,363	2,281	24,250	24,300	2,723	2,532	2,723	2,641	27,250	27,300	3,083	2,892	3,083	3,001
21,300	21,350	2,369	2,178	2,369	2,287	24,300	24,350	2,729	2,538	2,729	2,647	27,300	27,350	3,089	2,898	3,089	3,007
21,350	21,400	2,375	2,184	2,375	2,293	24,350	24,400	2,735	2,544	2,735	2,653	27,350	27,400	3,095	2,904	3,095	3,013
21,400	21,450	2,381	2,190	2,381	2,299	24,400	24,450	2,741	2,550	2,741	2,659	27,400	27,450	3,101	2,910	3,101	3,019
21,450	21,500	2,387	2,196	2,387	2,305	24,450	24,500	2,747	2,556	2,747	2,665	27,450	27,500	3,107	2,916	3,107	3,025
21,500	21,550	2,393	2,202	2,393	2,311	24,500	24,550	2,753	2,562	2,753	2,671	27,500	27,550	3,113	2,922	3,113	3,031
21,550	21,600	2,399	2,208	2,399	2,317	24,550	24,600	2,759	2,568	2,759	2,677	27,550	27,600	3,119	2,928	3,119	3,037
21,600	21,650	2,405	2,214	2,405	2,323	24,600	24,650	2,765	2,574	2,765	2,683	27,600	27,650	3,125	2,934	3,125	3,043
21,650	21,700	2,411	2,220	2,411	2,329	24,650	24,700	2,771	2,580	2,771	2,689	27,650	27,700	3,131	2,940	3,131	3,049
21,700	21,750	2,417	2,226	2,417	2,335	24,700	24,750	2,777	2,586	2,777	2,695	27,700	27,750	3,137	2,946	3,137	3,055
21,750	21,800	2,423	2,232	2,423	2,341	24,750	24,800	2,783	2,592	2,783	2,701	27,750	27,800	3,143	2,952	3,143	3,061
21,800	21,850	2,429	2,238	2,429	2,347	24,800	24,850	2,789	2,598	2,789	2,707	27,800	27,850	3,149	2,958	3,149	3,067
21,850	21,900	2,435	2,244	2,435	2,353	24,850	24,900	2,795	2,604	2,795	2,713	27,850	27,900	3,155	2,964	3,155	3,073
21,900	21,950	2,441	2,250	2,441	2,359	24,900	24,950	2,801	2,610	2,801	2,719	27,900	27,950	3,161	2,970	3,161	3,079
21,950	22,000	2,447	2,256	2,447	2,365	24,950	25,000	2,807	2,616	2,807	2,725	27,950	28,000	3,167	2,976	3,167	3,085
22,000						25,000						28,000					
22,000	22,050	2,453	2,262	2,453	2,371	25,000	25,050	2,813	2,622	2,813	2,731	28,000	28,050	3,173	2,982	3,173	3,091
22,050	22,100	2,459	2,268	2,459	2,377	25,050	25,100	2,819	2,628	2,819	2,737	28,050	28,100	3,179	2,988	3,179	3,097
22,100	22,150	2,465	2,274	2,465	2,383	25,100	25,150	2,825	2,634	2,825	2,743	28,100	28,150	3,185	2,994	3,185	3,103
22,150	22,200	2,471	2,280	2,471	2,389	25,150	25,200	2,831	2,640	2,831	2,749	28,150	28,200	3,191	3,000	3,191	3,109
22,200	22,250	2,477	2,286	2,477	2,395	25,200	25,250	2,837	2,646	2,837	2,755	28,200	28,250	3,197	3,006	3,197	3,115
22,250	22,300	2,483	2,292	2,483	2,401	25,250	25,300	2,843	2,652	2,843	2,761	28,250	28,300	3,203	3,012	3,203	3,121
22,300	22,350	2,489	2,298	2,489	2,407	25,300	25,350	2,849	2,658	2,849	2,767	28,300	28,350	3,209	3,018	3,209	3,127
22,350	22,400	2,495	2,304	2,495	2,413	25,350	25,400	2,855	2,664	2,855	2,773	28,350	28,400	3,215	3,024	3,215	3,133
22,400	22,450	2,501	2,310	2,501	2,419	25,400	25,450	2,861	2,670	2,861	2,779	28,400	28,450	3,221	3,030	3,221	3,139
22,450	22,500	2,507	2,316	2,507	2,425	25,450	25,500	2,867	2,676	2,867	2,785	28,450	28,500	3,227	3,036	3,227	3,145
22,500	22,550	2,513	2,322	2,513	2,431	25,500	25,550	2,873	2,682	2,873	2,791	28,500	28,550	3,233	3,042	3,233	3,151
22,550	22,600	2,519	2,328	2,519	2,437	25,550	25,600	2,879	2,688	2,879	2,797	28,550	28,600	3,239	3,048	3,239	3,157
22,600	22,650	2,525	2,334	2,525	2,443	25,600	25,650	2,885	2,694	2,885	2,803	28,600	28,650	3,245	3,054	3,245	3,163
22,650	22,700	2,531	2,340	2,531	2,449	25,650	25,700	2,891	2,700	2,891	2,809	28,650	28,700	3,251	3,060	3,251	3,169
22,700	22,750	2,537	2,346	2,537	2,455	25,700	25,750	2,897	2,706	2,897	2,815	28,700	28,750	3,257	3,066	3,257	3,175
22,750	22,800	2,543	2,352	2,543	2,461	25,750	25,800	2,903	2,712	2,903	2,821	28,750	28,800	3,263	3,072	3,263	3,181
22,800	22,850	2,549	2,358	2,549	2,467	25,800	25,850	2,909	2,718	2,909	2,827	28,800	28,850	3,269	3,078	3,269	3,187
22,850	22,900	2,555	2,364	2,555	2,473	25,850	25,900	2,915	2,724	2,915	2,833	28,850	28,900	3,275	3,084	3,275	3,193
22,900	22,950	2,561	2,370	2,561	2,479	25,900	25,950	2,921	2,730	2,921	2,839	28,900	28,950	3,281	3,090	3,281	3,199
22,950	23,000	2,567	2,376	2,567	2,485	25,950	26,000	2,927	2,736	2,927	2,845	28,950	29,000	3,287	3,096	3,287	3,205
23,000						26,000						29,000					
23,000	23,050	2,573	2,382	2,573	2,491	26,000	26,050	2,933	2,742	2,933	2,851	29,000	29,050	3,293	3,102	3,293	3,211
23,050	23,100	2,579	2,388	2,579	2,497	26,050	26,100	2,939	2,748	2,939	2,857	29,050	29,100	3,299	3,108	3,299	3,217
23,100	23,150	2,585	2,394	2,585	2,503	26,100	26,150	2,945	2,754	2,945	2,863	29,100	29,150	3,305	3,114	3,305	3,223
23,150	23,200	2,591	2,400	2,591	2,509	26,150	26,200	2,951	2,760	2,951	2,869	29,150	29,200	3,311	3,120	3,311	3,229
23,200	23,250	2,597	2,406	2,597	2,515	26,200	26,250	2,957	2,766	2,957	2,875	29,200	29,250	3,317	3,126	3,317	3,235
23,250	23,300	2,603	2,412	2,603	2,521	26,250	26,300	2,963	2,772	2,963	2,881	29,250	29,300	3,323	3,132	3,323	3,241
23,300	23,350	2,609	2,418	2,609	2,527	26,300	26,350	2,969	2,778	2,969	2,887	29,300	29,350	3,329	3,138	3,329	3,247
23,350	23,400	2,615	2,424	2,615	2,533	26,350	26,400	2,975	2,784	2,975	2,893	29,350	29,400	3,335	3,144	3,335	3,253
23,400	23,450	2,621	2,430	2,621	2,539	26,400	26,450	2,981	2,790	2,981	2,899	29,400	29,450	3,341	3,150	3,341	3,259
23,450	23,500	2,627	2,436	2,627	2,545	26,450	26,500	2,987	2,796	2,987	2,905	29,450	29,500	3,347	3,156	3,347	3,265
23,500	23,550	2,633	2,442	2,633	2,551	26,500	26,550	2,993	2,802	2,993	2,911	29,500	29,550	3,353	3,162	3,353	3,271
23,550	23,600	2,639	2,448	2,639	2,557	26,550	26,600	2,999	2,808	2,999	2,917	29,550	29,600	3,359	3,168	3,359	3,277
23,600	23,650	2,645	2,454	2,645	2,563	26,600	26,650	3,005	2,814	3,005	2,923	29,600	29,650	3,365	3,174	3,365	3,283
23,650	23,700	2,651	2,460	2,651	2,569	26,650	26,700	3,011	2,820	3,011	2,929	29,650	29,700	3,371	3,180	3,371	3,289
23,700	23,750	2,657	2,466	2,657	2,575	26,700	26,750	3,017	2,826	3,017	2,935	29,700	29,750	3,377	3,186	3,377	3,295
23,750	23,800	2,663	2,472	2,663	2,581	26,750	26,800	3,023	2,832	3,023	2,941	29,750	29,800	3,383	3,192	3,383	3,301
23,800	23,850	2,669	2,478	2,669	2,587	26,800	26,850	3,029	2,838	3,029	2,947	29,800	29,850	3,389	3,198	3,389	3,307
23,850	23,900	2,675	2,484	2,675	2,593	26,850	26,900	3,035	2,844	3,035	2,953	29,850	29,900	3,395	3,204	3,395	3,313
23,900	23,950	2,681	2,490	2,681	2,599	26,900	26,950	3,041	2,850	3,041	2,959	29,900	29,950	3,401	3,210	3,401	3,319
23,950	24,000	2,687	2,496	2,687	2,605	26,950	27,000	3,047	2,856	3,047	2,965	29,950	30,000	3,407			

Loan or lease? Buying a car

Christina is buying a new Dodge Charger for 29,000. She has three different options, a purchase, a loan or a lease. After 3 years the projected sell back price of the car is 12,399



1. PURCHASE (Special deal- no interest 😊)

a. The purchase option is 0% down 0% APR for 2 years. What will her monthly payments be on this option?

N: FV:

I%: P/Y:

PV: C/Y:

2. LOAN (Still a purchase but must pay interest)

a. The second option is taking out a loan for 3 years at 5.99% APR. She must make a 10% down-payment on this option. What will her monthly payments be on this option?

N: FV:

I%: P/Y:

PV: C/Y:

3. LEASE

a. The third option is a lease where the monthly payment is \$349 per month for 3 years. You must make a one time balloon payment (or walk-away payment) of \$1200 when you trade in your car.

4. Comparing

	PURCHASE	LOAN	LEASE
MONTHLY PAYMENT			
x (times) number of total payments			
+ down payment and or balloon payments			
TOTAL MONEY SPENT ON CAR			
- Selling back car after it is paid off			
TOTAL COST (OVERALL)			

Which option would you suggest for Christina to take and why?

5. Christina makes 42,350 annual salary. Let's find out if she can afford the option you selected. (assume taxes are 32.65%)

MONTHLY POST-TAX SALARY: \$ _____

RENT	\$ 600	MEDICAL INSURANCE	\$ 150
UTILITIES	\$ 125	GAS	\$ 150
FOOD/GROCERY	\$ 375	MONTHLY CAR PAYMENT	\$
CAR INSURANCE	\$ 100		
PHONE/INTERNET/CABLE	\$ 150	TOTAL BILLS	\$

So how much money does she have left over after paying all her bills? So do you think she can afford the car payment you selected?

Wanda and her husband just found out they are expecting triplets so they decide that it is time to buy a minivan. They choose to buy a Chrysler Town and Country for \$34,650. They cannot afford the purchase option so they are looking at either taking out a loan or just leasing the car.

6. **LOAN OPTION:** The loan option is for five years at a 4.5% APR. They must make a 15% down payment.
- What are the monthly payments on the car?

N: FV:
 I%: P/Y:
 PV: C/Y:
 - What is the total money that they will spend on the car (if they do not trade it in/sell back)
 - How much extra did they spend over the actual purchase price of the car? (this is due to the fact that they had to pay interest)
 - If they can sell it back for \$21,550 in 5 years what would be the total cost of the car?
7. **LEASE OPTION:** The lease option is \$459 per month with a \$990 walk away fee at the end of the five year lease.
- What is the total cost of the car under the lease?
8. Which option would you pick Wanda and her expanding family? Why?



Activity Sheet 9.2

Benefits of Education

Is the cost of postsecondary education (as you calculated in Activity Sheet 9.1) worth it? Is it a wise investment? One way to consider worth is to compare the value of educational level to potential salaries. Table 1 displays the unemployment rate and median weekly earnings in 2014 for different levels of educational attainment (U.S. Bureau of Labor Statistics Current Population Survey 2015).

Table 1

Education Level Attained	2014 Unemployment Rate (%)	Median Weekly Earnings (\$)	Annual Earnings (\$)
Doctoral degree	2.1	1591	
Professional degree	1.9	1639	
Master's degree	2.8	1326	
Bachelor's (four-year) degree	3.5	1101	
Associate's (two-year) degree	4.5	792	
Some college, no degree	6.0	741	
High school diploma	6.0	668	
Less than a high school diploma	9.0	488	

- Write two observations related to unemployment rates and education level.
- Calculate the annual earnings for each educational attainment level. Record the values in the table.

3. Find the difference for how much more the average person will earn *weekly* and *annually* for the two given levels of education:

Levels of Education	Weekly Difference in Earnings	Annual Difference in Earnings
a. High school graduate and associate's degree		
b. High school graduate and bachelor's degree		
c. High school graduate and [your choice]		

4. Based on annual earnings and the cost of obtaining a degree (as you calculated in Activity Sheet 9.1), do you believe that investing in obtaining a two-year (associate's) degree is a wise investment? Why or why not?

5. Do you believe that investing in obtaining a four-year (bachelor's) degree is a wise investment? Why or why not?

6. Why do you think the Bureau of Labor Statistics reported the median weekly earnings rather than the mean weekly earnings for each educational attainment level?

Reference

U.S. Bureau of Labor Statistics. "Earnings and Unemployment Rates by Educational Attainment" (2016). *Employment Projections*. http://www.bls.gov/emp/ep_table_001.htm.



Activity Sheet 9.3

Weighing the Costs and Benefits of Education

Investing in education is not about a year's salary but about a lifetime of potential earnings. We will focus on earnings associated with the highest earned degree of **high school diploma**, **associate's degree**, and **bachelor's degree**. And we will assume the person—

1. begins postsecondary education right after graduating from high school;
2. retires at age 67 (individuals born after 1960 are eligible for full retirement benefits from the Social Security Administration [2015] at age 67);
3. with the high school diploma begins full-time work at age 18;
4. with some college but no degree begins full-time work at age 19;
5. with the associate's degree begins full-time work at age 20; and
6. with the bachelor's degree begins full-time work at age 22.

1. Calculate lifetime earnings potential (sum of annual earnings from the first year of employment until retirement) using a spreadsheet or lifetime earning calculator (such as the one at <http://www.calcxml.com/calculators/ins07?skn=#calcoutput>) for high school graduates and individuals with two-year and four-year degrees. Use the annual earnings you calculated in Activity Sheet 9.2 and assume a 3% annual increase in salary.

Education Level Attained	Annual Earnings (\$)	Lifetime Earnings Potential (\$)
Bachelor's degree		
Associate's degree		
Some college, no degree		
High school diploma		

2. Based on lifetime earnings potential and the cost of obtaining a degree that you investigated in Activity Sheet 9.1, do you believe that investing in a two-year (associate's) degree is a wise investment? Why or why not?

3. Do you believe that investing in a four-year (bachelor's) degree is a wise investment? Why or why not?

Let's investigate your career earning potential! Identify **two** careers that you are considering. The Bureau of Labor Statistics (BLS) reports wage estimates for a considerable number of careers.

Go to the Occupational Employment Statistics at http://www.bls.gov/oes/current/oes_nat.htm#00-0000, locate the two career titles that most closely align with the two careers you identified, and record the mean wage for each of the two occupations.

Also find the level of education needed for each choice.

4. Record your two careers, the mean wage for each career, and the level of education needed for each here.

	Career 1: _____	Career 2: _____
Mean wage		
Level of education needed		

5. Unlike the report of median earnings for education levels, the Bureau of Labor Statistics reports the wage estimates for these careers in terms of the mean. Why do you think the BLS uses the mean rather than the median?

6. Taking into consideration the time needed to be eligible for employment in the two areas you identified and using the same processes you used in question 1, calculate the lifetime potential earnings for each career.

	Career 1: _____	Career 2: _____
Lifetime potential earnings (based on mean)		

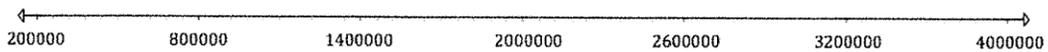
Your lifetime potential earnings were based on a **mean**, but there is a range of possible earnings for any career. Information about the annual 10th, 25th, 50th, 75th, and 90th percentile wages for careers can be found by downloading an XLS (spreadsheet) file from http://www.bls.gov/oes/current/oes_nat.htm#00-0000.

7. Describe what the annual 10th, 25th, 50th, 75th, and 90th percentile wages tell you about yearly earnings.

8. For each career you selected, use the values for the annual 10th, 25th, 50th, 75th, and 90th percentile wages to calculate the lifetime potential earnings associated with each percentile.

	Career 1: _____	Career 2: _____
10th percentile lifetime potential earnings		
25th percentile lifetime potential earnings		
50th percentile lifetime potential earnings		
75th percentile lifetime potential earnings		
90th percentile lifetime potential earnings		

9. Draw (by hand) custom box plots of the lifetime potential earnings for the two careers by using the 10th and 90th percentile values in place of the minimum and maximum values, respectively.



10. Write a summarizing statement that compares and contrasts lifetime potential earnings for each career.

In question 4, you identified the level of education that you would need to attain for your identified careers. Pick one of those careers to answer questions 11 and 12. (Skip to question 13 if your selected career does not require education beyond high school.)

11. In Activity Sheet 9.1, you explored a data set that listed the costs of institutions of higher education. Select one institution from the list that you would like to attend. Use the processes you used in Activity Sheet 9.1 (for questions 10, 11, and 12) to calculate the costs associated with obtaining the required degree from the institution that you would like to attend.

12. In question 8, you calculated the potential lifetime earnings for your career choice. In question 11, you calculated cost. Describe three things you notice about the career you selected in terms of the costs and benefits.

13. To this point, you have considered the benefits of education based strictly on cost and salary. What are some additional factors that need to be considered related to:

a. costs of postsecondary education?

b. employment benefits?

Reference

U.S. Social Security Administration. "Full Retirement Age: If You Were Born in 1960 or Later" (2015).
<http://www.socialsecurity.gov/retirement/1960.html>.

Types of Aid: LOANS (go back to the main student aid site, and click on the loans tab under types of aid)

- 7) What is a direct *Subsidized* Loan is.

- 8) What is a direct *Unsubsidized* Loan is.

- 9) Can a graduate student get a subsidized loan? (remember that a graduate student is someone who is working on their Masters degree or higher)

- 10) How much can you borrow in a direct subsidized loan as an undergraduate per year?

- 11) How do you get a federal student loan?

Types of Aid: LOANS (click on the subsidized v. unsubsidized links in the definitions under “what type of federal student loans are available”

DIRECT SUBSIDIZED

- 12) Who determines how much money you can borrow?

- 13) Do you pay interest on a direct subsidized loan while still enrolled in college?

- 14) Do you pay interest on a unsubsidized loan while still enrolled in college?

- 15) What is the interest rate for each of the following?
Direct Subsidized for Undergrads:

Direct Unsubsidized for Undergrads:

Direct Unsubsidized for Graduate:

16) When do you have to start paying back your loan?

Using the Loan Payback Calculator: Use your TVM solver on your calculator for the following

17) Using the standard 4.53% interest rate what is the monthly payment on a \$32,000 loan? (for a standard repayment). Because the federal government is very very greedy, they compound interest DAILY. Assume you choose a 10 year payback (120 total payments)

18) How much will you end up paying total over the total repayments?

19) So how much did you pay total in interest payments?

HOPE/ ZELL MILLER SCHOLARSHIP: <https://www.gafutures.org/hope-state-aid-programs/>

20) What does your GPA need to be when you graduate high school to be eligible for the HOPE scholarship?

21) What do you have to do to be eligible for the Zell Miller Scholarship? (GPA and SAT score/ACT score)

22) Assuming a normal semester course load of 12 credit hours, determine the amount of aid you could get per semester at the following colleges (look under “award amounts”

	HOPE	ZELL MILLER
KSU		
UGA		
Georgia State		
Georgia Southern		
(choose your own GA college- write in)		

HOPE GRANT:

23) What is the HOPE GRANT?

24) Do you have to have a specific GPA when you graduate high school to be eligible for the Hope Grant?

25) List 4 colleges/technical schools that are HOPE Grant eligible

Credit Card Preview:

SITUATION: You got a credit card so you could buy a new laptop for school. You went all out and bought a 13-inch macbook pro for \$1299. You used the credit card and plan to pay it off every month. The APR (annual percentage rate) is 18% which means you have a monthly interest rate of 1.5%. This finance charge is added to your total every month. You only plan on paying off \$100 every month on the credit card.



Determine how long it will take to pay off this laptop. (Assume you do not put any other charges on this credit card). Round 2 decimal places

	MONTH 1	MONTH 2	MONTH 3	MONTH 4
Total on Card	\$1299	\$1216.99		
- \$100 payment	\$1199			
+ 1.5% finance charge	$(.015)1199 = 17.99$			
END OF MONTH BALANCE	$\$1199 + \$17.99 =$ \$1216.99			

	MONTH 5	MONTH 6	MONTH 7	MONTH 8
Total on Card				
- \$100 payment				
+ 1.5% finance charge				
END OF MONTH BALANCE				

	MONTH 9	MONTH 10	MONTH 11	MONTH 12
Total on Card				
- \$100 payment				
+ 1.5% finance charge				
END OF MONTH BALANCE				

	MONTH 13	MONTH 14	MONTH 15	MONTH 16
Total on Card				
- \$100 payment				
+ 1.5% finance charge				
END OF MONTH BALANCE				

- 1) How many months did it take you to pay off the laptop?
- 2) How much did you spend in fees?! (add up all the finance charges over the time period)

Unit 6 SAS8: Making Sense of Credit

Below is an example of a credit card statement. Some of the areas have been blanked out with ??? because in the following questions you will be figuring out what those charges are.

TEXAS CREDIT		OPENING/CLOSING DATE:	7/19/08 - 08/18/08
		PAYMENT DUE DATE:	9/12/08
		MINIMUM PAYMENT DUE:	\$93.30
CARD SUMMARY		ACCOUNT NUMBER 5555 5555 5555 5555	
PREVIOUS BALANCE	\$2,342.51	TOTAL CREDIT LINE	\$3,000
PAYMENT, CREDITS	-\$150.21	AVAILABLE CREDIT	\$376
PURCHASES, CASH, DEBITS	\$410.89	CASH ACCESS LINE	\$500
FINANCE CHARGES	???	AVAILABLE FOR CASH	\$376
NEW BALANCE	???		
TRANSACTIONS			
DATE	DESCRIPTION	CREDIT	DEBIT
7/23	GAS		\$70.61
7/24	PAYMENT - THANK YOU	\$100	
7/24	HARDWARE STORE		\$139
7/28	FLOWERS		\$24.95
8/03	GROCERIES		\$176.33
8/18	HARDWARE STORE RETURN	\$50.21	
FINANCE CHARGES			
	DAILY PERIODIC RATE		FINANCE CHARGE
	31 DAYS IN CYCLE		DUE TO
TYPE		APR	PERIODIC RATE
PURCHASES	???	28.99%	???
CASH	???	28.99%	\$0

1. What are the dates that this credit card statement is for?
2. Did this person already owe money on the credit card BEFORE this month? How much did they already owe?
3. What did they spend money on this month? (on a credit card statement this shows as debits)
4. Did they make any credits to their account? What were they?

5. Credit cards give out the interest rate as APR (annual periodic rate). What is the APR on this credit card?
6. Even though interest is given as an APR credit card interest is compounded monthly. What is the monthly periodic rate?
7. Before interest is added on to the account we need to find what the balance of the credit card was before the finance charge. (the previous balance + and expenses – any credits)
8. What is the finance charge (or interest charge) for this month? Use the monthly interest rate and the answer you just found from number 7
9. So what is the new balance at the end of the month? (Add the finance charge to the balance on the credit card)

Minimum payments come in 2 forms. 1) The credit card company may make a SET minimum payment. For example the minimum payment is \$25 regardless of how much you currently owe. 2) The credit card company may say your minimum payment is a *set percentage* of your current balance before interest.

10. For this particular credit card, the company uses option 2, meaning the minimum monthly payment is always a set percentage of the current credit card balance. Look back at the credit card statement. What is the minimum payment for this month?
11. What percentage is the minimum payment to the new balance before interest?

EXTENSION

12. Marley has a credit card with an APR of 22.75% and a current balance of \$14,677.90. Assume her credit card using the “set percentage” method of minimum payments. If her minimum payment is the same percentage of the question before, what is her minimum payment on this credit card?

13. Use the TVM solver on the calculator to determine how long it will take Marley to pay off her credit card if she only makes the minimum payment.

N:

I%:

PV:

PMT:

FV:

MAKING A BUDGET:

14. As you can see, Marley is in debt. Marley makes \$2,500 gross monthly income. Assume all of her state and federal taxes come to 32.65%. What is her monthly after tax income?

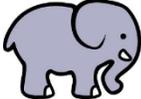
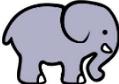
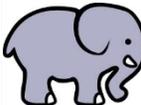
15. Below are Marley's required monthly expenses. (fill in the minimum credit card payment from above)

Rent	\$450
Renters Insurance	\$30
Car	\$250
Car Insurance	\$80
Utilities (water, electricity, trash, natural gas)	\$125
Medical Insurance	\$125
Gas	\$100
CREDIT CARD PAYMENT	

16. After she pays all of her expenses how much money does she have left?

17. Remember that this budget did not include Food, internet, phone or any other expenses. Does she have enough to pay for those things with the money she has left over for the month?

18. What recommendations would you give to Marley to alter her budget so that she could have a reasonable budget?

<p>How much will a deposit of \$5,000 be worth in 20 years with an interest rate of .45% compounded quarterly?</p> 	<p>If you want to have \$5,000 in 4 years and you have a savings account with 1.2% interest compounded monthly, how much do you need to put in now?</p> 	<p>You work 5 days a week for 8 hours a day. Your hourly salary is \$22.50. How much is your pre-tax monthly salary (HINT- find annual salary first then divide!)</p> 
<p>Your monthly salary is \$3,214. The following taxes are taken out every month: 15% for federal income tax, 2.9% for Medicare, 6.9 % for Social Security and 4% for Georgia income tax. What is your monthly post-tax salary?</p> 	<p>How much will a deposit of \$6,000 be worth in 10 years with an interest rate of .75% compounded monthly?</p> 	<p>Your monthly salary is \$2,997. The following taxes are taken out every month: 15% for federal income tax, 2.9% for Medicare, 6.9 % for Social Security and 4% for Georgia income tax. What is your monthly post-tax salary?</p> 
<p>How much will a deposit of \$4,500 be worth in 30 years with an interest rate of .35% compounded monthly?</p> 	<p>If you want to have \$1,000 in 4 years and you have a savings account with .699% interest compounded quarterly, how much do you need to put in now?</p> 	<p>You work 5 days a week for 8 hours a day. Your hourly salary is \$25.80. How much is your pre-tax monthly salary (HINT- find annual salary first then divide!)</p> 
<p>You work 5 days a week for 8 hours a day. Your hourly salary is \$27.25. How much is your pre-tax monthly salary (HINT- find annual salary first then divide!)</p> 	<p>Your monthly salary is \$3,542. The following taxes are taken out every month: 15% for federal income tax, 2.9% for Medicare, 6.9 % for Social Security and 4% for Georgia income tax. What is your monthly post-tax salary?</p> 	<p>If you want to have \$2,000 in 5 years and you have a savings account with .09% interest compounded monthly, how much do you need to put in now?</p> 

<p>Your credit card has an APR (annual percentage rate) of 28.99%. You are charged interest monthly so what is your monthly rate?</p> 	<p>The balance you owe on your credit card is \$525. Your monthly rate is 3.2%. How much will you be charged in finance charges?</p> 	<p>The minimum payment on your credit card is 3.4% of your current balance. If your current balance is \$525 what is your minimum payment?</p> 
<p>The minimum payment on your credit card is 3.9% of your current balance. If your current balance is \$935 what is your minimum payment?</p> 	<p>How are some people 'tricked' when they get short term loans (pay-day loans)</p> 	<p>Your credit card has an APR (annual percentage rate) of 22.99%. You are charged interest monthly so what is your monthly rate?</p> 
<p>The balance you owe on your credit card is \$950. Your monthly rate is 2.5%. How much will you be charged in finance charges?</p> 	<p>What is one practice that credit card companies do that you think is wrong?</p> 	<p>Describe what an overdraft fee is</p> 
<p>Your credit card has an APR (annual percentage rate) of 31.99%. You are charged interest monthly so what is your monthly rate?</p> 	<p>The minimum payment on your credit card is 3.5% of your current balance. If your current balance is \$852 what is your minimum payment?</p> 	<p>The balance you owe on your credit card is \$672. Your monthly rate is 2.9%. How much will you be charged in finance charges?</p> 

PART 1: PLAY SOME FOOTBALL!

Go to the following website to play Financial Football! A game that tests your knowledge about finance:

<http://www.practicalmoneyskills.com/games/trainingcamp/ff/play/> FOR FOOTBALL

<http://www.financialsoccer.com/play/> FOR SOCCER

You may choose to play Single Player or against a Classmate for Head to Head

Select "Pro" Ages 14-18

And Select a full 20 minute game.

1) After playing the game, what are 3 facts that learned about finance that you didn't already know?

PART 2: READ SOME STUFF!

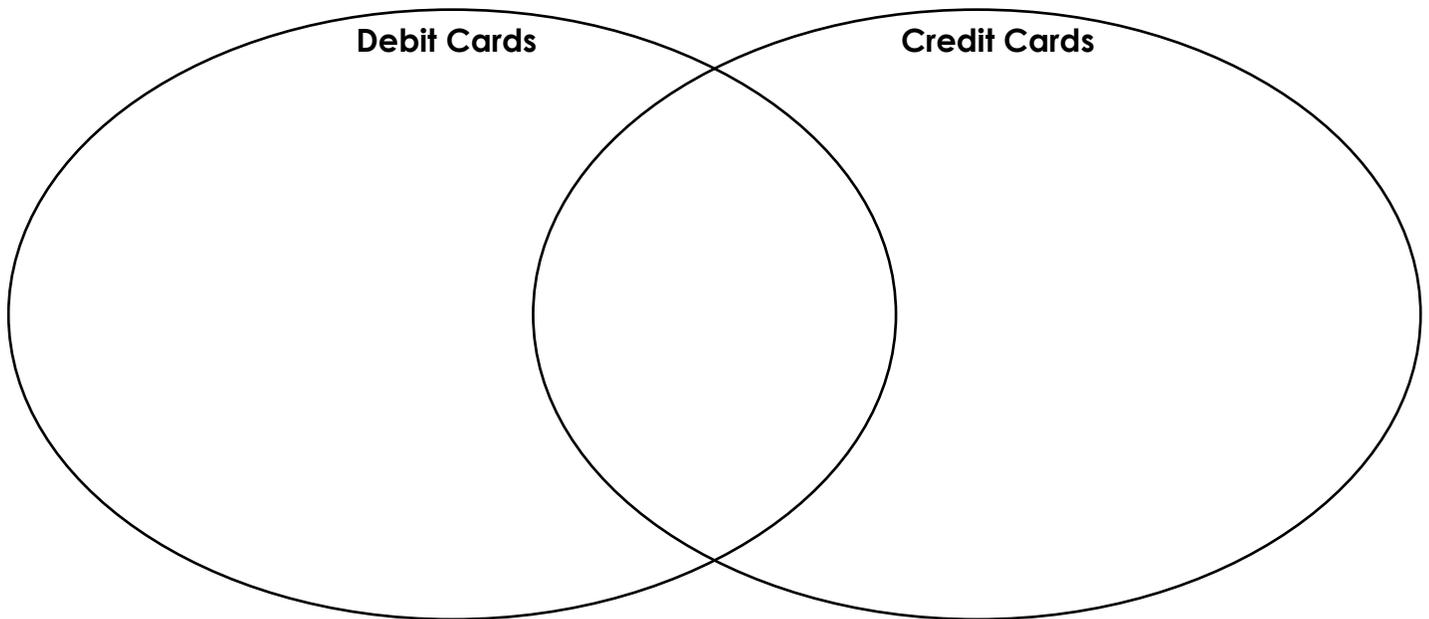
Read the information about comparing Debit Cards and Credit Cards(p.46-47). Then answer the questions below.

1. All credit cards charge an annual periodic rate. (T/F)
2. The grace period refers to the time between the billing statement date and the due date. (T/F)
3. What are three things that can determine someone's credit limit?
4. Interest rates on cash advances on credit cards are (higher/lower) than interest rates on other purchases.
5. Your debit card charges an APR (T/F)

6. You have \$500 in your bank account and you just had an emergency car repair that will cost you \$700. Should you use your credit card or debit card? Why?

7. If you are under 21 what would you need to do to sign up for a credit card?

8. Fill out 3 facts for each part of the venn diagram below (☺ they don't go away ☺)



For each of the following write **D.** for debit card; **C.** for credit card and **B.** for both

___ 9. Can be used at ATMS

___ 10. Money immediately withdrawn from checking account

___ 11. Can be used for online purchases

___ 12. Can improve your credit score

___ 13. Have interest fees

___ 14. Have overdraft fees

___ 15. Have over the limit fees

___ 16. Can be used instead of cash

___ 17. Covers you against fraudulent purchases

___ 18. Offers rewards programs

DEBIT CARDS (pay now) v. CREDIT CARDS (pay later)

Let's take a look at each.

Pay Now: Debit Cards

A **debit card** (also known as a check card) looks like a credit card but is an alternative payment method to cash and checks. When you make a purchase with a debit card, the funds are **immediately withdrawn** from your bank account and transferred into the account of the store or business where you completed the transaction. Because a debit card links directly to your bank account, you can spend only what you have in your account.

While this helps keep you out of debt, you need to monitor debit card purchases closely and stick to your budget so you don't overdraw your checking account. If you use your debit card to buy something that costs more than the amount of money in your account, the charge may be rejected or, if you have overdraft protection, you may be charged an overdraft fee.

Benefits of debit cards:

- They allow you to make the same kinds of purchases as you do with credit cards so you don't need to carry cash.
- Most provide the same type of "zero liability" protection as credit cards.
- There is no APR or interest rate charged.
- There are no monthly payments or debt accrued.

Things to watch for:

- If you overdraw your account, you will be charged a fee for each transaction.
- If you withdraw money from an ATM machine that's not part of your financial institution's ATM network, you could incur fees on both sides – from your bank or credit union and the other institution that operates the ATM.

Pay Later: Credit Cards

A **credit card** entitles you to make purchases based on your promise to pay for these purchases at a later date. The card issuer grants you a line of credit, which is a promise from the card issuer to you that they will loan you any amount of money up to the credit limit on the account. You can use that credit to purchase goods, pay bills or obtain cash advances (like using an ATM). So no money is immediately deducted from your checking account. New laws from the credit CARD Act of 2009 place strict limitations on issuing cards to consumers under 21. If you fall in that age group, you have to have a co-signer or show proof of sufficient income to repay the debt.

Each month, the card issuer sends you an account statement that lists all of your purchases and the total amount you have purchased using the card that month. All credit cards issue you credit which you must pay back at an annual percentage rate set by the credit card company. The total amount is called your balance. When **you pay the full amount** of the balance, the card issuer charges you **no interest for this service**. If you **do not pay the full amount**, the balance on your card account becomes a loan to you from the card issuer and **you begin paying interest on this loan** in ADDITION to the balance you already owe. Essentially you are paying for the fact that you are in debt.

Benefits of credit cards:

- They let you buy items in stores, online, on the phone or through a mail order catalog without using cash. Or buying items that are expensive in one purchase like a new laptop
- They help you to establish credit history if you use them wisely.
- Enable you to purchase airline tickets, reserve hotel rooms and rent cars – all transactions that can be difficult to do using cash. Many debit cards cannot be used for this
- Provide access to cash advances in case of emergency.
- Depending on the credit card issuer, their rewards program may provide points with each purchase that can be used to receive free airline miles, merchandise or cash back on purchases.

Things to watch for:

- Credit cards make impulse buying easier, which can throw off your budget and increase your level of debt.
- Items charged cost more (cost of item + interest) **unless you pay the balance in full each month.**
- **Late payments** may incur fees, increase interest rate and negatively impact your credit rating.

- If you don't monitor spending carefully, your **purchases can push you over the credit limit**, resulting in an additional fee. This could also increase your interest rate and lower your credit score.
- While cash advances can be helpful in emergencies (using your credit card at the ATM), these incur a very high interest charge.

Key Terms

- **Annual fee** – This is a fee that some, but not all, credit card issuers charge to use their credit card.
- **Annual percentage rate (APR)** – Also known as interest rate, it is the percentage used to compute the finance charges on an outstanding balance.
- **Available credit** – The amount of unused credit available on your credit card account.
- **Cash advance transaction finance charge** – Most credit cards let you obtain a cash advance from your account, but there is a dollar limit and you may be charged an additional fee for this transaction. Plus, interest rates charged for cash advances are often higher than the rates for purchases.
- **Cardholder agreement** – This document details the terms and conditions of your credit card account. It will include your APR, any applicable annual fee, penalties and other costs associated with the use of the card.
- **Credit line (or credit limit)** – The maximum amount you are allowed to carry as a balance on the card. The amount of your credit limit is determined by your income, your credit score and your payment history (on-time payments)
- **Finance charge** – Based on the interest rate, this is the amount of interest you pay on the outstanding balance.
- **Grace period** – The period of time between the billing statement date and the date full payment must be received before interest is charged on your account balance and new purchases.
- **Introductory rates** – The APR offered by a credit card company as a promotional offer, which can vary from a few months to a year. The rate is then adjusted to the standard APR.
- **Late payment fee** – Amount charged if your payment is received after the billing due date.
- **Minimum monthly payment** – The amount due based on the percentage of the outstanding balance, or a minimum fixed amount.
- **Overdraft** – When you write a check or make a withdrawal from your checking account that leaves you with a balance below zero. If you sign up for overdraft protection, your bank will cover the transaction but will likely charge you an overdraft fee to do so.

Frontline: The Card Game

1. How much debt have credit cards created in the past 30 years?



2. How much money did the credit card company Providian make in a year?

3. What does “un-banked” refer to?

4. Name at least one credit card ‘gimmick’; they call them stealth pricing .

5. Describe what the credit card company charged to the woman, how much did she end up paying in fees?

6. What did the credit card companies do to Don Bolinger?

7. What was one of the reasons for the 2008 stock market crash, for example what were people doing to pay off debts?

8. Why did it take a near collapse of the economy to create a bill regulating Credit Cards?

9. What is one of the loopholes of the CARD law?

10. Describe the shady practice that the credit card did to either Pam Swinski the free-lance author or Ben Collins the small business construction owner.

11. How can banks make money on debit cards/ free checking accountings?
12. How much did Josette Wermeth have to pay TOTAL overdraft fees that she did not know she was accumulating?
13. How much do "pay-day" lenders lendout per year?
14. How much did the \$255 cost in fees and what would have been the annual interest rate?
15. What does the Truth In Lending Act require? (TILA)
16. What does Elizabeth Warren suggest is necessary to make sure banks and credit cards companies do not abuse their power?

Wait until the video has ended before answering the following

17.OPINION: Do YOU think there should be a government agency that regulates banks and credit cards? Provide at least TWO arguments to support your side.

You've Graduated College..... NOW WHAT?!

For this project you are going to be planning out your monthly budget for when you have graduated from college. Remember that all of the following will be for AFTER COLLEGE.

SALARY (post-tax monthly salary)

- a. Research a job that you plan on going into and find the STARTING SALARY for that job. Use the bureau of labor and statistics website http://www.bls.gov/oes/current/oes_nat.htm#00-0000. When you find your job click on the link and use the 10% percentile wage as that will be closest to the national average for a starting position. Note that you cannot pick a job that you do not have the necessary education for. For example you cannot be a doctor with only an undergraduate degree. Determine the monthly income POST-TAX! (assume taxes are 32.65% of your monthly income)

COLLEGE LOAN (monthly cost)

- b. Research the college you are planning on attending. Calculate the tuition for 4 years (and indicate if you will or will not be living on campus-that changes the cost) A direct subsidized loan is a 10 year payback at 4.35% and the maximum you can take out is 50,000. If 50,000 will not cover it you can take out an additional UNSUBSIDIZED loan which is a 6.08% interest rate (it can be a 10, 15 or 25 year payback). Use the TVM solver to determine the monthly payments. Take out a subsidized loan FIRST because it won't accumulate interest while you are in college 😊

CAR LOAN (monthly cost)

- c. Next, you will have to research getting a car loan. Find an actual car that you want to buy. Research current car loan rates by searching for "auto loan rates." Use the TVM solver on your calculator to determine what your monthly car rates will be. You can choose a payback of 3-5 years and you can choose to make a down payment or not

APARTMENT (monthly cost)

- d. Now, you will research renting an apartment. Find an actual apartment that will match your needs for when you graduate college. If you cannot afford the full rent, you can get a roommate to split the rent with.

OTHER MONTHLY EXPENSES

- e. Do some research to determine the monthly cost for the following budget needs. I have given you some information already

	MONTHLY COST	Where/How you determined the monthly cost
Cell Phone		
Internet		
Cable (or Netflix or other streaming services)		
Water	\$25	GIVEN
Electricity/Natural Gas	\$75	GIVEN
Car Insurance	\$100	GIVEN
Renter's Insurance	\$30	GIVEN
Health Insurance	\$125	GIVEN
Gas (for car)		
Food		
Entertainment/Personal		
Savings		

WHAT'S LEFT OVER

- f. You must (no matter how small) have a positive balance at the end of the month. If you do not, then you need to make adjustments to be positive amount