2.3-2.4 Savings Plans and Loan Payments
<u>Group Activity</u>

Use a spreadsheet to work on these problems. Write down the syntax to show your work. Answer each question in a complete sentence.

1. Jackie is 34 years old. She would like to have one million dollars in her retirement account when she is 65 years old.
   a. How much would she need to deposit every month into an account with an APR of 7.25%, compounded monthly, to achieve her goal?

   b. If she had started the account at age 21 (same APR), how much would she need to deposit every month to achieve her goal?

   c. If she had started the account at age 21 (same APR) and <u>deposited the amount calculated in part (a) every month</u>, what would the balance be when she retired at age 65?

   d. How much would she need to deposit as a lump sum at age 21 with the same APR (without making another payment) to have a million dollars at age 65?

2. Sam has a student loan of $30,000 at a fixed APR of 4.45%. If they want to pay it off in 15 years,

    a. How much would they pay per month?

    b. How much would they pay in total?

    c. What percentage of the total was paid toward the loan amount of $30,000 and what percentage was paid toward interest?

9. You want to buy a $350,000 home. You plan to put 10% down and take out a 30-year fixed mortgage on the rest.

    a. What will the loan amount be?

    b. What will your monthly payment be if the interest rate is 4.5%?

    c. If you make all the payments for 30 years, how much would you have paid for the house in total?

    d. In part b above, what number would you get if you switch the 0 and the 315,000? Why are the answers so different? Explain the difference between these two scenarios.

Car Loan Activity

1) Open the Car Loan Spreadsheet template from D2L. It has 8 cars in columns with different purchase prices and loan information. There is a copy on the next page.

   a. Write a formula using cell references in B5 for the loan amount. Then use the fill-across feature to copy the formula across the row.

   b. Write a formula using cell references in B8 for the monthly payment. Then copy the formula across the whole row.

   c. Which car would you choose and why?

2) You are checking out a special for a 2016 Nissan Pathfinder SL priced at $33,750. There are two offers to choose from (both with zero down):
   A. No rebate and 4.99% APR
   B. $3,000 rebate and 8.75% APR (The rebate reduces the loan by $3,000)

   a. Type in the principal values for options A and B in B15 and B19.

   b. Write a formula in cell C14 using cell references to calculate the monthly payment for option A. Copy the formula across.

   c. Write a formula in cell C18 using cell references to calculate the monthly payment for option b. Copy the formula across.

   d. Which is the best option, A or B? Explain.

3) For problem 2, option A, how much would you need for a down payment to keep your monthly payment less than $350 on a 7-year loan? (Can you do this in two different ways as a check?)

2.4: Car Loans

PROBLEM 1	1990 Acura NSX	2015 BMW M4	1963 Chevy II Nova	2013 Chevy Camaro SS	2015 Ford F-150 SuperCrew	2015 Ford Mustang GT	2008 Tesla Roadster	2010 Toyota Tundra
Purchase Price	$34,525	$62,866	$32,150	$25,800	$27,936	$29,961	$62,950	$19,280
Down Payment	$5,000	$10,000	$5,000	$2,000	$4,000	$2,000	$7,000	$1,000
Amount loaned								
Term (yr)	6	7	5	5	6	7	6	4
APR	7.35%	6.95%	8.45%	4.95%	8.25%	3.99%	5.65%	6.75%
Monthly Payment								

PROBLEM 2	2016 Nissan Pathfinde SL	$33,750	COMPARE: Rebate vs. Better Rate (Zero down payment for both options)				
	Term (yr)	3	4	5	6	7	
Option A monthly payment	**No Rebate** **P=**						
	APR 4.99%						
Option B monthly payment	**$3000 Rebate** **P=**						
	APR 8.75%						

PROBLEM 3	For Problem 2, Option A, how much would you need for a down payment to keep your monthly payment less than $350 on a 7 year loan?