

Decision Making in Finance: Using Credit
 VI.D Student Activity Sheet 10: Buying a Losing Investment

1. Christina is considering buying a new car with a sticker price of \$23,599. Her credit union offers her a three-year car loan at 5.99% annual percentage rate (APR) with 10% as a down payment. Find the monthly payment.

Variable	Definition of Variable	Value in Christina's Loan Situation
N	number of compounding periods	36
$I\%$	annual interest rate	5.99
PV	principal, or present value	23599 - 2359.90
PMT	amount of each regular payment	-646.04
FV	future value	0
P/Y	number of payments per year	12
C/Y	number of compounding periods per year	12

24
0
23599
0
12
12

2359.90
11367.34

2. Christina's car will be worth \$14,250 in three years. What will the total cost of the car be at the end of the loan?

$36(646.04) + 2359.90 - 14250$

What is the benefit of this type of financing? What is the cost of this type of financing?

3. Christina considers a different option. The dealership offers 0% down and 0% APR for two years. The car will be worth \$17,629 in two years.

983.29

What will the monthly payments be under these conditions? How much will the total cost of the car be if Christina takes this loan?

$23599 - 17629$

Which loan should Christina take? Why?

YOUR OPTION

4. Christina has an offer to lease the same car for three years at \$349 per month. The lease has a balloon payment of \$1,200 at the end of three years. What is the total cost of the lease?

$36 \times 349 + 1200 = 13764.00$

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5. What interest rate is Christina being charged for leasing the car?

Variable	Definition of Variable	Value in Christina's Leasing Situation
<i>N</i>	number of compounding periods	36
<i>I%</i>	annual interest rate	5.59%
<i>PV</i>	principal, or present value	23599
<i>PMT</i>	amount of each regular payment	- 349
<i>FV</i>	future value	- 14250
<i>P/Y</i>	number of payments per year	12
<i>C/Y</i>	number of compounding periods per year	12

Should Christina take the lease? Why or why not?

YOUR OPINION

6. The car manufacturer offers a lease-to-purchase option at 1.9% APR for three years. At the end of this option, Christina can keep the vehicle by paying the depreciated value or walk away for a fee of \$150. What is the monthly payment of the lease-to-purchase option? What is the total cost of the purchase option if she walks away?

Variable	Definition of Variable	Value in Christina's Lease-to-Purchase Situation
<i>N</i>	number of compounding periods	36
<i>I%</i>	annual interest rate	1.9
<i>PV</i>	principal, or present value	23599
<i>PMT</i>	amount of each regular payment	- 289.43
<i>FV</i>	future value	- 14250
<i>P/Y</i>	number of payments per year	12
<i>C/Y</i>	number of compounding periods per year	12

36×289.43
 $+ 150$
 10587.48

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7. REFLECTION: Which alternative should Christina choose: the loan, the lease, or the purchase option? Why?

YOUR OPINION

8. Christina works for a law firm and makes \$42,350 a year. Based on standard budgeting used in Student Activity Sheet 8 and using your choice in Question 7, can she afford the car? Explain your answer.

9. EXTENSION: Wanda wants to buy a new car for \$34,650. The bank will give her a car loan for five years at 4.5% APR with \$0 down payment. What will her monthly payment be?

Variable	Definition of Variable	Value in Wanda's Loan Situation
<i>N</i>	number of compounding periods	
<i>I%</i>	annual interest rate	
<i>PV</i>	principal, or present value	
<i>PMT</i>	amount of each regular payment	
<i>FV</i>	future value	
<i>P/Y</i>	number of payments per year	
<i>C/Y</i>	number of compounding periods per year	

a. Wanda's car will be worth \$18,935 in five years. The manufacturer offers a lease-to-purchase option at 7% APR. At the end of the purchase option, Wanda can keep the vehicle by paying the depreciated value or walk away for a fee of \$180. What will her monthly payment be?

Variable	Definition of Variable	Value in Wanda's Lease-to-Purchase Situation
<i>N</i>	number of compounding periods	
<i>I%</i>	annual interest rate	
<i>PV</i>	principal, or present value	
<i>PMT</i>	amount of each regular payment	
<i>FV</i>	future value	
<i>P/Y</i>	number of payments per year	
<i>C/Y</i>	number of compounding periods per year	