

Buying a Car

There are three variables, or numbers, that are used to calculate your car payment. They are _____, _____, and _____. You can play around with these numbers to get the lowest possible monthly payment but you will pay more in interest. This packet will explore some of these basic tradeoffs. As a general guideline, your car payment should be _____ percent of your monthly take home pay.

The first consideration that comes into play is your credit score. Your credit score is based on how well you have paid your bills and any money you have borrowed in the past, as well as how much you have on your credit cards. Banks use a tiered finance system – the better your credit score, the better risk you are for the bank, and the lower the interest rate you'll be able to get.

Suppose you need to borrow \$12,000 for a car, and will pay it back over five years. Today, if you have an A credit score you could get a rate of about 5.99%, a B credit score and your rate will be about 6.99%, a C credit score and your rate will be about 10%. If your credit score is below a D you will probably not be able to get financing from a bank. There are car dealers who will get you into a car, but you'll pay a rate of about 20%, or even higher.

1. Go to the website www.bankrate.com. Click on the Calculators tab and select Auto Payment Calculator. Complete the following calculations for a \$12,000 loan for five years.

<u>Credit Score</u>	<u>Interest Rate</u>	<u>Monthly Payment</u>	<u>Total Cost of Car</u>	<u>Amount of Interest Paid</u>
A	5.99			
B	6.99			
C	10.0			
D	20.0			

2. Make a bar graph, with the interest rate on the x axis (along the bottom), and the amount of interest paid on the y axis (along the side). As you can see, getting the best interest rate you can is important. Call your bank, AAA, credit union, etc. before going to the dealer. It will sometimes save you money.

3. One of the first decisions to make is how much down you will put on a car. The more down, the less you have to borrow, so the lower your monthly payment will be. People will often have some money saved, but want to use it for other things, and don't want to spend it all on a car. So, how much of your savings to spend?

Suppose you want to buy a car for \$12,000. You can get a loan at 7% for 36 months. You have \$5000 in total savings. Using the online calculator, complete the following table (round answers to the nearest dollar):

<u>Amount down</u>	<u>Amount of loan</u>	<u>Monthly payment</u>	<u>Total cost of car</u>	<u>Amount of interest paid</u>	<u>% of car paid in interest</u>
\$500					
\$1000					
\$3000					
\$5000					

What two quantities, or numbers, did you add together to find the total cost of the car?

Total cost of car = _____ + _____

What two quantities, or numbers, did you subtract to find the amount of interest paid?

Amount of interest paid = _____ - _____

What do you think you would do? Why? (answer on back)

4. Another consideration is how long you want to pay off your car. The longer the loan, the lower your monthly payment. But, the longer the loan the more interest you will pay for the car. Also, the longer the loan, the higher the interest rate. The following interest rates were recently advertised on the internet:

	30-36 months	37-60 months	61-72 months
New	5.99%	6.25%	6.59%
Used	6.55%	6.85%	7.39%

You can assume these are for A credit scores. Why do you think I can make this assumption?

You want to buy a \$12,000 new car and will put \$800 down. Using the interest rates in the table above (and the online calculator) complete the following table (round all answers to the nearest dollar):

<u>Length of loan</u>	<u>Monthly Payment</u>	<u>Total cost of car</u>	<u>Amount of interest paid</u>	<u>% of car paid in interest</u>
2 years				
3 years				
4 years				
5 years				
6 years				

What do you think you would do? Why? (answer on back)

5. Used cars are less expensive than the same model new car. They are also at a slightly higher interest rate. Suppose you could buy a new car for \$12,000 or the same model car that is one year old for \$10,000. You will put \$500 down and want a 4 year loan. Use the interest rates from question 4. What would you do?

First, what calculations would be helpful?

Do these calculations.

Use these numbers, as well as your personal preference, to explain which car you would choose.

Answers:

The three variables are interest rate, length of loan, and amount of loan.

As a general guideline, your car payment should be about 15 % of your monthly take home pay.

If you use current, updated interest rates, your answers will be different, so I will not include my answers here. For question 1, the calculations are straight forward, similar to the homework.

For question 3, notice the amount of the loan will change because you are varying the amount down. Most students do that part well. The confusion comes in with the total cost of the car, and, the amount of interest paid. The total cost of car = down payment + total monthly payments. Many students forget to add in the down payment (which changes for every row). The amount of interest paid = total amount paid to the bank – how much borrowed. Some students want to use the total cost of the car instead of the total amount paid to the bank (in other words, they are including their down payment in the total amount paid to the bank – which they don't have to do because they are not paying interest on this money). I will show the first line as an example:

amount down	amount of loan	monthly payment	total cost of car	amount of interest paid	% of car paid in interest
\$500	11,500	355.09	$12,783 + 500 = 13,283$	$12,783 - 11,500 = 1283$	$1283/12,000 = 10.7\%$

For question 4, you can assume these interest rates are for A credit scores because banks will want to advertise their best rate. The fine print on the advertisement usually says “rates as low as...”. The students will need to figure that the loan amount is \$11,200. The students will also have a tendency to make the same errors here that they made in the previous problem. I will show the first line answers as an example:

Interest rate	length of loan	monthly payment	total cost of car	amount of interest paid	% of car paid in interest
5.99%	2 years	496.34	$11,912 + 800 = 12,712$	$11,912 - 11,200 = 712$	$712 / 12,000 = 5.9\%$

For question 5, there is no right or wrong answer. Its purpose is to use the ideas explored in this packet and discuss reasons for buying a new or a used car. Calculations that could be helpful are monthly payments, total cost of car, and amount of interest paid. For a new car this gives: a monthly payment of \$271.40, the total cost of the car is \$13,527, and the amount of interest paid is \$1527. For a used car this gives: a monthly payment of \$226.83, the total cost of the car is \$11,389, and the amount of interest paid is \$1389. Some reasons for buying a used car could be:

lower monthly payments, less interest, I can repair my own car (some students), or it fits the budget and the new car does not. Some reasons for buying a new car could be: a lower interest rate (even though paying more in interest overall), don't want to too many car repairs, I like a new car so it is worth the extra money, a new car is under manufactures warranty, I'm afraid I might get a lemon, or I plan to keep the car for as long as I can so it is worth it to start with a new car.