November 14th, 2019

Dear Jeffery and Lillie,

I know you both have had trouble deciding whether or not you should refinance your mortgage. I thought that I should write to you both and try to help you come to the best decision on whether or not you should refinance. After reviewing your situation, I determined your best options based on the numbers that I calculated for you. Hopefully, you will consider these options in order for you to make the best possible financial decision.

First, I would like to address the original thirty year mortgage without refinancing. If you were to make a ten percent down payment on a thirty year mortgage with an interest rate of 4.45% compounded monthly, your monthly payment would be $1,219.66. The ten percent down payment would be $2,400 this would bring your house payment down to $216,000 for the next 30 years. At the end of the thirty years, you would pay an estimate of $223,076.43 in interest. All together, you would pay $439,077.60 by the end of the mortgage. This seems to be the most simple option, however, when you compare these numbers to the refinancing option, you will see a significant difference.

If you choose to refinance the house after five years, you will see that each of your payments differ. After the first five years, your payments per month will decrease significantly because of the decreased annual percentage rate. The payment per month will decrease from $1,219.66 to $989.44 at the five year mark, which means you will be paying $230.22 less each month than the original thirty year mortgage payment per month. Also, the unpaid balance at the five mark is $299,832 which includes the $3,000 penalty. This is because the annual percentage rate decreased from 5.45% to 4.15%. After thirty years, you will pay approximately $169,049.72

in interest. All together, the estimated total will be $373,011.60, after adding the $3,000 penalty for taking out a new mortgage. This option saves you $54,026.71 in interest and $66,066.00 in total. This seems to be the best option because you will pay less each month and you end up saving more in total at the end of the thirty years because of the decreased annual percentage rate.

Additionally, if you choose to refinance, you will have different options of investments. Since you save $230.22 after five years on your monthly payment, you will be able to invest this amount into a savings account for retirement. Hypothetically, this account has an interest of 5% compounded monthly. Even though the $3,000 penalty does not allow you to save much from the beginning, the lowered annual percentage rate allows you to save more each month. If you did not refinance, you could put the $3,000 into a saving account from the beginning of your thirty year mortgage and allow it to sit in the account and build interest. However, you would not end up saving as much as you would if you refinanced. If you choose to refinance your account, your future value saved would be an estimate of $217,507.92 by the time you retire at age 65. This option would allow you to save a large amount of money to insure a comfortable retirement, free from significant financial stress.

An alternative use of the money saved each month by refinancing would be if you decide to spend half of the $230.22 saved each month and save the other half. This means you would have $115.11 each month to spend and to save. If you choose this option, your final savings would be significantly lower, but you would have some money to spend each month to improve your lifestyle. By retirement, you would save roughly $108,753.96, which is half of what you would save if you put the entire $230.22 into the savings account each month. This would be a good option if you wanted to focus on improving your day-to-day lifestyle and have a bit less to spend at retirement.

Overall, refinancing is the best option because you save a significant amount of money in total and in interest by the end of the loan. However, how you choose to invest the money saved is determined by your monthly wants and needs. If you do not need extra money to spend each month, your best option would be to save the full $230.22 each month. However, if you desire to use half of that money each month you would be able to improve your monthly lifestyle, but you will have less saved in the future. I hope that you will review these amounts and take my advice into consideration when making your decisions. I wish you the best and I am always here to answer any further questions you have.

Sincerely,

Katie Huston and Jessica LaPlaga

Appendix

Refinance option.

	Interest	Payment in total
Five year at 5.45%	$56,761.56	$73,179.60
Twenty-five year at 4.15%	$112,288.16	$296,832.00
Total Thirty year	$68,049.72	$373,011.60

Regular thirty years:

Thirty years	$223,076.43	$439,077.60