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Professor Schrenk

Math 154 Quantitative Reasoning

December 7, 2019

Defining the Problem: We are remodeling our kitchen. We need new appliances that can replace the ineffective ones that we currently possess. With that being said, we need to find a reasonable and practical way to afford these items. We must carefully analyze the appliance market for offers that we could possibly use effectively finance our appliances. We want prices that will save us money but, at the same time we do not want appliances that are unreliable and poorly built. We must obtain these items in any way possible, meaning that if we must wait for deals or bundles to come out that would be ok. To achieve this goal, I will use my mathematician skills to draw a conclusion based on data that has been accurately measured to determine my method of obtaining these appliances. Our priority needs in our kitchen are a refrigerator, dishwasher, stove/oven, and microwave.

Identifying Strategies: There are plenty of ways for us to purchase the appliances but, we do not simply want to buy the first thing we see because we would like to find the best deal for us possible. We need to look extensively into every possible website that sells the appliances that we are searching for. We need to think about how we are going to pay for these items, are we going to finance with a credit card? Or we could take out a bank loan with interest attached? We could also use in store credit and pay with that card as well opposed to the credit card. Not only do we have these options but, we need to learn how can finance the appliances. We need to see if the distributor will allow us to use credit cards or only

allow us to use in store credit. I plan to use the internet and have compare prices simultaneously so that I will know that I am getting the best deal. After I have found the best deal, I will calculate which deal is the best by using math to conclude which deals saves me the best money. I need to find out how to apply for these loans and what are the pre-requisites (if there are any) to obtain one of the loans.

Potential Solutions:

Bank Loan- Bank loans will usually have lower rates but, the APR starts a lot sooner than the other options due their grace periods. Because of this you will most likely end up spending more money. [https://www.navyfederal.org/products-services/loans/personal-loans/personal-](https://www.navyfederal.org/products-services/loans/personal-loans/personal-loans.php?cmpid=PPC%7cGOOGLE%7c%7c%7c%7cnavy%20federal%20loan%7c%7cPERSONALLOANSPROSPECT%7c%7c&gclid=EAIaIQobChMI14zWk-mi5gIVAuiGCh2QvQ2rEAAYASAAEgKLxvD_BwE&gclsrc=aw.ds)

[loans.php?cmpid=PPC%7cGOOGLE%7c%7c%7c%7cnavy%20federal%20loan%7c%7cPERSONALLOANSPROSPECT%7c%7c&gclid=EAIaIQobChMI14zWk-mi5gIVAuiGCh2QvQ2rEAAYASAAEgKLxvD_BwE&gclsrc=aw.ds](https://www.navyfederal.org/products-services/loans/personal-loans/personal-loans.php?cmpid=PPC%7cGOOGLE%7c%7c%7c%7cnavy%20federal%20loan%7c%7cPERSONALLOANSPROSPECT%7c%7c&gclid=EAIaIQobChMI14zWk-mi5gIVAuiGCh2QvQ2rEAAYASAAEgKLxvD_BwE&gclsrc=aw.ds)

Store Credit- Is not entirely bad and provides me with more cash in the long run due to points on the card. Meaning I could potentially get discounts on future appliances. I could use these discounts to buy future appliances because I would be spending a large sum of money all at one time and it would exceed the minimum needed to be awarded the points which would make the points stack.

<https://www.lowes.com/l/storecredit.html>

Credit Card- The credit card is not a bad idea if you have good credit for this example, I will use the lowest APR possible because I want to keep the results on a similar bias. I used the lowest possible rates for the other examples and will keep it the same during my evaluation process.

https://www.capitalone.com/credit-cards/compare/?external_id=WWW_VI194_ZZZ_ONL-SE_AAAGO_T_SEM2_ZZZZ_c_Zg_ab4f8a5c-2dc7-4b94-9b19-b3634d7b67f3_259854366361_70000&target_id=kwd-10368730&gclid=EAIaIQobChMIqe6CwOii5gIVX4NaBR1vrgCcEAAYAyAAEgLG2_D_BwE

Buy Out the Product: Buying out the product is good if you have the money to buy it at that moment especially if the product is on sale. The bundle I will evaluate is on sale but, they still make it available for you to finance instead of simply buying it out. Because of this I would use this as my first choice if it was possible but, it is not realistic.

https://www.homedepot.com/p/Whirlpool-Front-Control-Built-in-Tall-Tub-Dishwasher-in-Monochromatic-Stainless-Steel-with-1-Hour-Wash-Cycle-55-dBA-WDF520PADM/205506225?mtc=Shopping-VF-F_Vendor-G-D29A-29_7_DISHWASHERS-Multi-NA-Feed-PLA-NA-NA-MajorAppl&cm_mmc=Shopping-VF-F_Vendor-G-D29A-29_7_DISHWASHERS-Multi-NA-Feed-PLA-NA-NA-MajorAppl-71700000032422847-58700003840694697-92700030730651

Evaluate Potential Solutions- I have calculated my options mathematically and these are the results.

AutoSave

MY PROJECT 2 INFORMATION.xlsx - Saved to OneDrive

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FileHomeInsertDrawPage LayoutFormulasDataReviewViewHelp

Tell me what you want to do

General

Conditional FormattingTable

Check Cell

NormalBadGoodNeutral

ExplanatoryInputLinked Cell

CalculationNote

InsertDeleteFormat

AutosumFillClear

Sort & Find & FilterSelect

Editing

ClipboardFontAlignmentNumberStylesCells

K16

APR: 29.50%

Appliance Being Financed by Store Credit

MonthBalancePaymentInterestNew Balance

1\$4,018.18\$222.23\$-\$3,795.95

2\$3,795.95\$222.23\$-\$3,573.72

3\$3,573.72\$222.23\$-\$3,351.49

4\$3,351.49\$222.23\$-\$3,129.26

5\$3,129.26\$222.23\$-\$2,907.03

6\$2,907.03\$222.23\$-\$2,684.80

7\$2,684.80\$222.23\$-\$2,462.57

8\$2,462.57\$222.23\$-\$2,240.34

9\$2,240.34\$222.23\$-\$2,018.11

10\$2,018.11\$222.23\$-\$1,795.88

11\$1,795.88\$222.23\$-\$1,573.65

12\$1,573.65\$222.23\$-\$1,351.42

13\$1,351.42\$222.23\$-\$1,129.19

14\$1,129.19\$222.23\$-\$906.96

15\$906.96\$222.23\$-\$684.73

16\$684.73\$222.23\$-\$462.50

17\$462.50\$222.23\$-\$240.27

18\$240.27\$222.23\$5.99\$24.03

19\$24.03\$222.23\$0.60\$137.60

What I actually end up spending in cash\$4,024.77

APR: 0%

Bank Loan From Virginia Credit Union

MonthBalancePaymentInterestNew Balance

1\$4,018.18\$222.23\$20.09\$3,816.04

2\$3,816.04\$222.23\$19.08\$3,612.89

3\$3,612.89\$222.23\$18.06\$3,408.73

4\$3,408.73\$222.23\$17.04\$3,203.54

5\$3,203.54\$222.23\$16.02\$2,997.33

6\$2,997.33\$222.23\$14.99\$2,790.08

7\$2,790.08\$222.23\$13.95\$2,581.80

8\$2,581.80\$222.23\$12.91\$2,372.48

9\$2,372.48\$222.23\$11.86\$2,162.12

10\$2,162.12\$222.23\$10.81\$1,950.70

11\$1,950.70\$222.23\$9.75\$1,738.22

12\$1,738.22\$222.23\$8.69\$1,524.68

13\$1,524.68\$222.23\$7.62\$1,310.07

14\$1,310.07\$222.23\$6.55\$1,094.39

15\$1,094.39\$222.23\$5.47\$877.64

16\$877.64\$222.23\$4.39\$659.79

17\$659.79\$222.23\$3.30\$440.86

18\$440.86\$222.23\$2.20\$220.84

19\$220.84\$222.23\$1.10\$0.29

20\$220.84\$222.23\$1.10\$0.29

What I actually end up spending in cash\$4,222.08

APR: 0%

Discover Credit Card

MonthBalancePaymentInterestNew Balance

1\$4,018.18\$222.23\$-\$3,795.95

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FileHomeInsertDrawPage LayoutFormulasDataReviewViewHelp

Tell me what you want to do

General

Conditional FormattingTable

60% - Accent160% - Accent260% - Accent360% - Accent460% - Accent5

60% - Accent6Accent1Accent2Accent3Accent4

InsertDeleteFormat

AutosumFillClear

Sort & Find & FilterSelect

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ClipboardFontAlignmentNumberStylesCells

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222.23

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Evaluate Impact of Potential Solutions: In the long run financing would not be the best move financially for my kitchen. This is due to the overall amount of money spent on the product while financing it always concluded in a number that was higher than the price that was on

displayed on the bundle. If the item were to not have been on sale, then using store credit would have been the best choice financially for my kitchen remodel process. This choice would not be the best for everyone if they did not have the money needed to satisfy the price on the bundle at that very moment because not everyone has 4018.10 dollars to spend casually. Realistically you would have to finance the bundle and go with the in store minimum payment of \$223.23 and this would give you best choice economically. The choice that would work the best for me would be the in-store credit because it saves the most money and it allows me to afford the kitchen without having to stress if I will have enough to pay for it.

Reflect on Problem Solving Process: In the end, I found the most financially beneficial strategy to remodel my kitchen. I used a six-step process to achieve my answer and explained in detail what my goal was and how I was going to achieve it. I followed both My professor's rubric and the college problem solving rubric and came to conclusion. The problem-solving aspect of this project really allowed me to apply what I have learned in Math 154. This exercise helps you with math that can be used in a real-world situation and provides you with most reasonable and logical solution to the problem. This exercise allowed me to access a critical thought process that would help answer a problem that could potentially sprout in the future.

[Information](#)