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Portfolio Project

Bryant & Stratton College

MATH201 College Mathematics: Quantitative Reasoning

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## Introduction

The purpose of this portfolio project is to prepare college graduates to enter a professional work environment, and properly manage their finances. It is important to understand the necessity of budgeting wisely, in order to manage money well. Understanding how to save money for large expenses, such as a house, will make it easier to have enough money to provide for daily necessities. Overall, this project will help college students grow in their understanding of what it means to be an adult, work in a professional environment, and budget money wisely.

### Part 1 - Budget Basics

#### Budget Basics

##### a) Monthly Net Pay

Table 1: Income	
Profession:	Medical Administrative Assistant
Annual Salary:	\$42,800
Gross Monthly Pay ( <b>rounded to the cent</b> ): Annual salary divided by 12 <b>Show your work!</b>	\$3,567.00  $\$42,800/12 = \$3,567.00$
Monthly Net (take-home) Pay ( <b>rounded to the cent</b> ): Gross monthly pay minus 20% for income taxes, FICA taxes, and health insurance deductions <b>Show your work!</b>	\$2,853.60  $\$3,567.00 - 20\% = \$2,853.60$

##### b) Monthly Expenses

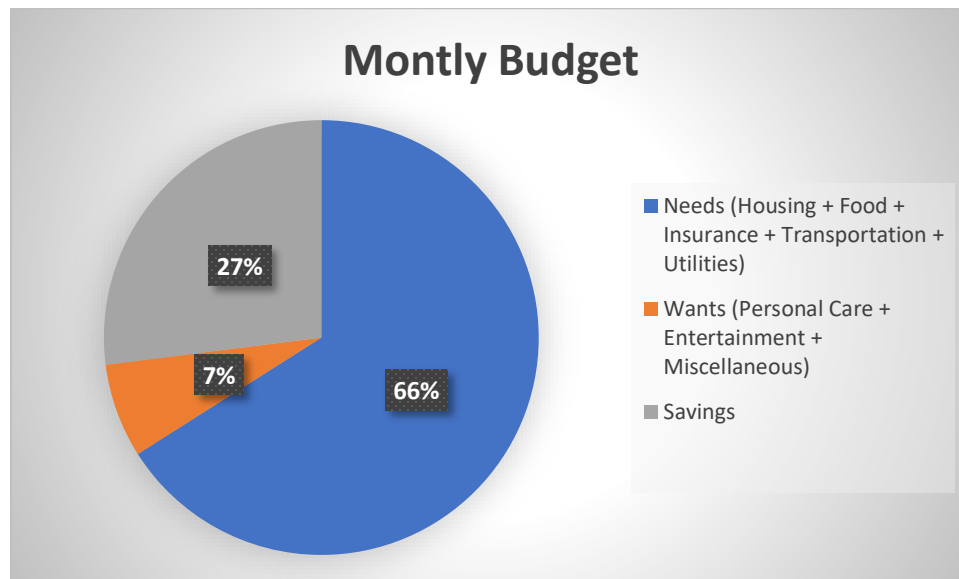
**Table 2: Monthly Expenses**

Table 2: Monthly Expenses			
Budgeted Category	Category Details	Total Budgeted Amount	Percent of Total Take Home Pay (Rounded to Nearest Whole Percent) – Show work
Housing (Need)	Rent or mortgage payment = \$400 property taxes = \$200 repairs = \$200 etc.	\$800	28%  Work: $800 * 100$ $80,000/2853.60$  28%
Food (Need)	Groceries = \$400 going out to eat = \$50 small snacks (lattes, vending machine, etc.)	\$450	16%  Work: $450 * 100$ $45,00/2853.60$  16%
Insurance (Need)	Life = Parents Insurance Medical = Parents Insurance Home = Parents Insurance Auto = Parents Insurance	\$0	0%  Work:
Transportation (Need)	Car payment = No payment Fuel = \$150 Parking = \$0 Oil change = \$70	\$220	8%  Work: $220 * 100$ $22,000/2853.60$  8%
Utilities (Need)	Water = \$21 Electricity = \$100 Internet = \$50 Gas = \$80 Phone = \$165	\$416	15%  Work: $416 * 100$ $41600/2853.60$  15%
Personal care (Want)	Haircuts = My sister cuts my hair for free Clothing = \$0 Make-up = \$20 Nails = \$65	\$85	3%  Work: $85 * 100$ $8,500/2853.60$  3%
Entertainment (Want)	Anything fun (leisure activities) = Netflix = Parents Hulu = Parents Disney Plus = Parents Gym Membership = Parents Vacation = Birthday/Holiday gifts = \$100	\$100	4%  Work: $100 * 100$ $10,000/2853.60$  4%

Miscellaneous (Want)	Donations = Day Care / School Expenses = Credit Card Payment = \$10 Student Loan Payment =	\$10	0.3%  Work: $10 \times 100$ $1000 / 2853.60$  0.4%
Savings (Savings)	Retirement / Savings = \$500 Emergency Fund (leftover income) = \$272.60	\$772.60	27%  Work:
<b>TOTAL</b>		<b>\$2,853.60</b>	<b>100%</b>

**c) Create a Monthly Expenses Pie Chart**

<b>Needs</b> (Housing + Food + Insurance + Transportation + Utilities)	66%
<b>Wants</b> (Personal Care + Entertainment + Miscellaneous)	7%
<b>Savings</b>	27%



**d) Compare your Monthly Expense Ratios to the 50-30-20 Rule**

The pie chart that I have created to manage my needs, wants, and savings, is different from the 50-30-20 rule. My pie chart separates my needs into 66%, wants into 7%, and savings into 27%. I would say that my savings are closest to following this rule, but there are some changes that will need to be made as I pay these expenses in the future.

I plan to make changes in my needs, wants, and savings now that I have learned about the 50-30-20 rule. I plan to add more expenses to my wants in a month to make sure that I am being realistic. It is important to expect to spend more in a month than I actually spend, this way I can make sure I have money left over what I need. I realize that in the next 5 years I may be paying for my phone plan, gas, car payments, and rent. Once I adjust this budget by adding more realistic numbers for my wants and needs, it will be more beneficial towards my future.

## Part 2 - Debt and Expenses

### Debt and Expenses

#### a) Calculate your Debt-to-Income Ratio

Monthly Debt:

Income: Gross monthly income (\$3,567.00)

- Car: \$283.00

- Housing: \$800.00

-Student Loans: \$0.00

- Credit Card: \$10.00

-Total Debt: \$1,093

Debt-to-Income Ratio: \$1,093 is what percentage of \$3,567.00.

$$\$1,093/\$3,567.00 = 0.3064$$

$$0.3064 \times 100 = 30.6\%$$

Debt-to-Income Ratio: \$1,093 is 30.6% of \$3,567.00

The recommended debt-to-income ratio is 43%, although it is considered wise to keep the percentage below 35%. My debt-to-income ratio compared to the recommended ratio is really good. My ratio is 30.6% which is normal for my career choice, and all the payments that I will have to make. The main reason why it is not high is because my car payments are low, and I will be graduating with no student loans, or school debt. There is nothing that I need to change for my debt-to-income ratio.

#### b) Calculate your Life Insurance Policy

- I. Use the information from Table 1: Income from Part 1 and the suggested average of 10 times your gross annual income to calculate your recommended life insurance policy. Show the complete breakdown of work.
  - Gross Annual Income: \$42,800
  - Recommended life insurance policy:  $10(\$42,800)$
  - Recommended life insurance policy: \$428,000
- II. What are dependents? Why would someone who is younger with dependents need more life insurance than someone who is older with few or no dependents? Explain your answer in 3-4 sentences.

Dependents are usually children who still live with their parents and are covered by their insurance. Someone younger with dependents needs more life insurance because they are responsible for the well-being of more people than just themselves. Older people with few or no dependents are responsible for less people and their well-being, which means their insurance can be lower.

**c) Calculate your Retirement Savings**

Based on your current Savings from Table 2, calculate your retirement savings by the time you are 65. Calculate your retirement savings by the time you are 70. Show the complete breakdown of work.

Retirement Savings:

$$A = x$$

$$P = \$500$$

$$R = 4\%$$

$$N = 12$$

$$T = 65$$



$$A = P(1 + r/n)^{\text{power of } n(t)}$$

$$A = 500.00(1 + 0.04/12)^{\text{power of } 12(65)}$$

$$A = 500.00(1.0033333333333333)^{\text{power of } 780}$$

**1.) A=\$6,702.83 in 65 years**

$$A = x$$

$$P = \$500$$

$$R = 4\%$$

$$N = 12$$

$$T = 70$$

$$A = 500.00(1 + 0.04/12)^{\text{power of } 12(70)}$$

$$A = 500.00(1 + 0.0033333333333333)^{\text{power of } 840}$$

$$A = 500.00(1.0033333333333333)^{\text{power of } 840}$$

$$A = 500.00(16.36825319)$$

**2.) A=\$8,184.13 in 70 years**

I believe that I am saving enough money each month to be able to retire by age 65. Since I am saving \$500 a month, I will have \$6,702.83 by age 65. If I decide to retire at 70 years old, I will have \$8,184.13. Beginning to save for retirement at a young age is wise, so that I am able to plan for my future ahead of time. This is much easier to do now, because I will not have any school loans to worry about. By the time I am able to retire, I will not have to worry about having enough money to support myself.

#### **d) Calculate your Emergency Fund**

Calculate 6 TIMES your monthly expenses. Show the complete breakdown of work.

Total of Monthly Expenses: \$2,853.60

$$6(\$2,853.60) = \$17,121.60$$

Emergency Fund each month: \$272.60

$$A = \$17,121.60$$

$$P = \$272.60$$

$$T = ?$$

$$N = 12$$

$$R = 0.05$$

$$t = \ln(A/P) / n[\ln(1+r/n)]$$

$$t = \ln(17,121.60/272.60) / (12 \times [\ln(1+0.05/12)])$$

$$t = \ln(17,121.60/272.60) / (12 \times [\ln(1+0.004166666666666)])$$

$$t = \ln(62.80851064) / (12 \times [\ln(1.004166667)])$$

$$t = 4.14009058 / 12(0.00415801)$$

$$t = 4.14009058 / 0.04989612$$

$$t = 82.974 \text{ years (about 83 years)}$$

$$t = \text{about 996 months}$$

### Part 3 – Mortgage, Monthly Payments, and Analysis

#### Mortgage, Monthly Payments, and Analysis

##### a) Determine Documents for Mortgage Pre-Approval

There are many documents that must be submitted for a mortgage approval. Some documents include personal identification, such as a driver's license. You will also need pay stubs, a social security card, bank statements, and tax documents. These types of documents will be helpful when working to get a mortgage approved.

##### b) Research Houses of Interest

Address, City, State	List Price	Number of Bedrooms	Number of Bathrooms	Square Footage
1487 South Carriage LANE, New Berlin, WI 53151	\$145,900	2	2	890 sqft
8624 West Maple STREET, West Allis, WI 53214	\$165,000	3	2	1,239 sqft
3352 South 52 <sup>nd</sup> STREET, Milwaukee, WI 53219	\$294,900	3	2	1,630 sqft
1000 South 108 <sup>th</sup> Street UNIT C2, West Allis, WI 53214	\$42,500	2	1	900 sqft
1307 South 84 <sup>th</sup> STREET, West Allis, WI 53214	\$229,000	3	2	1,440 sqft

##### c) Calculate Monthly Payment

House Address	Monthly Payment
1487 South Carriage LANE, New Berlin, WI 53151	\$756.38
8624 West Maple STREET, West Allis, WI 53214	\$858.91
3352 South 52 <sup>nd</sup> STREET, Milwaukee, WI 53219	\$1,556.25
1000 South 108 <sup>th</sup> Street  UNIT C2, West Allis, WI  53214	\$201.31
1307 South 84 <sup>th</sup> STREET, Milwaukee, WI 53226	\$1,202.48

**d) Calculate Housing Ratio**

House Address	Housing Ratio (Show all work)
1487 South Carriage LANE, New Berlin, WI 53151	$\$756.38/\$2,853.60 = 0.265$ 27%
8624 West Maple STREET, West Allis, WI 53214	$\$858.91/\$2,853.60 = 0.300$ 30%
3352 South 52 <sup>nd</sup> STREET, Milwaukee, WI 53219	$\$1,556.25/\$2,853.60 = 0.545$ = 55%

1000 South 108 <sup>th</sup> Street UNIT C2, West Allis, WI 53214	$\$201.31/\$2,853.60 = 0.070$  $= 7\%$
1307 South 84 <sup>th</sup> STREET, Milwaukee, WI 53226	$\$1,202.48/\$2,853.60 = 0.421$  $= 42\%$

- The only house that was within budget was the fourth house. The housing ratio equaled 7% which is below the recommended 20% ratio.

**e) Calculate Total Amount Paid and Interest**

The house that I would like to purchase is 1000 South 108<sup>th</sup> Street Unit C2, West Allis, WI 53214.

- Monthly Payments x 360 total payments)
- Monthly payment= \$201.31
- Total payments in months= 360
- $\$201.31(360) = \$72,471.60$
- **\$72,471.60 over 30 years.**

List Price= \$42,500

Down Payment= \$5,000

Loan amount= \$37,500

Loan term= 360 months

Monthly payment =201.31

Total of 360 payments= \$72,471.60

Total of 360 payments- Loan amount= Interest paid

**\$72,471.60- \$37500= \$34,971.60 interest paid**

**f) Calculate Closing Costs**

Closing Costs= 5% of list price of house chosen

Closing Costs equation=  $0.05(\$42,500)$

**Closing Costs= \$2,125**

**g) Financial Analysis**

- I would say that I would not be ready to apply for a mortgage today, as I still have payments to make for school and I do not have a stable job in my career field. I do feel that I would be able to afford this house in the next 2 years, when I am more financially stable. I will have a job as a Medical Administrative Assistant, and I have made plans to move out eventually with a close friend, cutting the cost in half.