Chapter 2 Project

On a Budget

An activity to demonstrate the use of fractions in real life.

Samantha's friend Meghan is always traveling to exotic locations when she goes on vacation. One day, Samantha asked Meghan how she was able to afford it. Meghan told her it was simple: she makes a budget and sets aside a portion of her income each month for a vacation. Meghan told Samantha that they could meet at her house for dinner on Saturday and she would be glad to show her how to make a budget.

The table below shows the amount Meghan spends on each category in her budget. Assume Meghan makes $4400 a month (after taxes) and answer the following questions. Fractions should be written in reduced form.

Meghan's Budget

Category	Amount	Category	Amount
Rent	$1100	Car Loan	$528
Groceries	$352	IRA	$264
Utilities	$220	Charity	$440
Dining Out	$264	Savings	$275
Vacation	$440	Car Insurance	$176
Gas	$88	Phone	$110

1. Samantha earns a different amount per month and wants to compare her spending to Meghan's, so she decides to convert all of Meghan's spending to fractions. Find the fractional values for Meghan's categories by dividing each amount by her monthly income and reducing the fractions to lowest terms.

Meghan's Budget

Category	Amount	Category	Amount
Rent		Car Loan	
Groceries		IRA	
Utilities		Charity	
Dining Out		Savings	
Vacation		Car Insurance	
Gas		Phone	

2. Find the sum of the fractions in the budget. Begin by adding the fractions that have like denominators, then add the fractions by finding a common denominator.

3. Samantha tells Meghan that her budget must be incomplete. Meghan informs her that the remaining is what she spends on miscellaneous items like cleaning supplies, toiletries, and clothes. What fraction of her budget does Meghan spend on miscellaneous items?

4. Samantha determines that she spends $\frac{1}{10}$ of her income on groceries and $\frac{1}{8}$ dining out. What fraction of her income in spent on food?

5. What fraction of Megan's income is spent on food?

6. Find the difference between the fractional amount that Meghan and Samantha spend for food. Who uses the largest fractional part of their income for food?

7. Add the fractional values for the car loan, car insurance, and gas to determine the fractional amount of Meghan's income that is set aside for her car.

8. Samantha doesn't have a car payment, but she has to pay for parking at her apartment. She has determined that she spends $\frac{1}{50}$ of her monthly income on car insurance, $\frac{3}{50}$ on parking, and $\frac{1}{25}$ on gas. What fractional part of her income is used for her car?

9. Find the difference between the fractional amount that Meghan and Samantha spend on their cars. Who uses the largest fractional part of their income for car expenses?

10. Meghan plans to move into a new apartment with a roommate and travel more often. She needs to revise her budget accordingly.

Meghan's Budget

Category	Amount	Category	Amount
Rent		Car Loan	
Groceries		IRA	
Utilities		Charity	
Dining Out		Savings	
Vacation		Car Insurance	
Gas		Phone	

a. Halve the first three fractions in the first column. Since Megan will have a roommate and will be gone more, she expects to spend half as much on rent, groceries, and utilities. Place the new values in the new table above.

b. Double the last three fractions in the first column. Since Megan will be traveling, she expects to spend twice as much for dinning out, vacation, and gas. Place the new values in the table.

c. Find the total fractional portion budgeted for the new budget plan if the second column remains the same.

d. Would Meghan be able to afford this new budget on her current income? In other words, do the new fractions in the table add up to a fraction less than 1?

e. If the new budget in part d. is over budget, what fraction is it over? If the new budget is under budget, what fractional portion is left over for miscellaneous items?