

*"The authors take an inventive approach to sharing math."*

*"This book gives real-world examples of how we use math in our daily lives."*

*"This book is a must-have for elementary classrooms."*

This math trail children's book features a collection of short stories on budgeting money for purchases. The book is intended for upper elementary grades, but the stories will appeal to other ages as well.

### About the Project

The authors of this book came together to fulfill the requirements of EDUC 262 Literature for Children and Adolescents in the Fall of 2010 at Howard University.

Book Designed by

*Victoria J. Productions*  
www.VictoriaJProductions.com

Shopping on a Budget at

THE MALL AT  
*Prince Georges*

#### Written by

Tekesha Bing  
Marlene Davis  
Cedric Jackson  
Duane Little  
Victoria J. Payne  
Moonah Turay

#### Photographs by

Duane Little  
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FINAL BOOK PREVIEW

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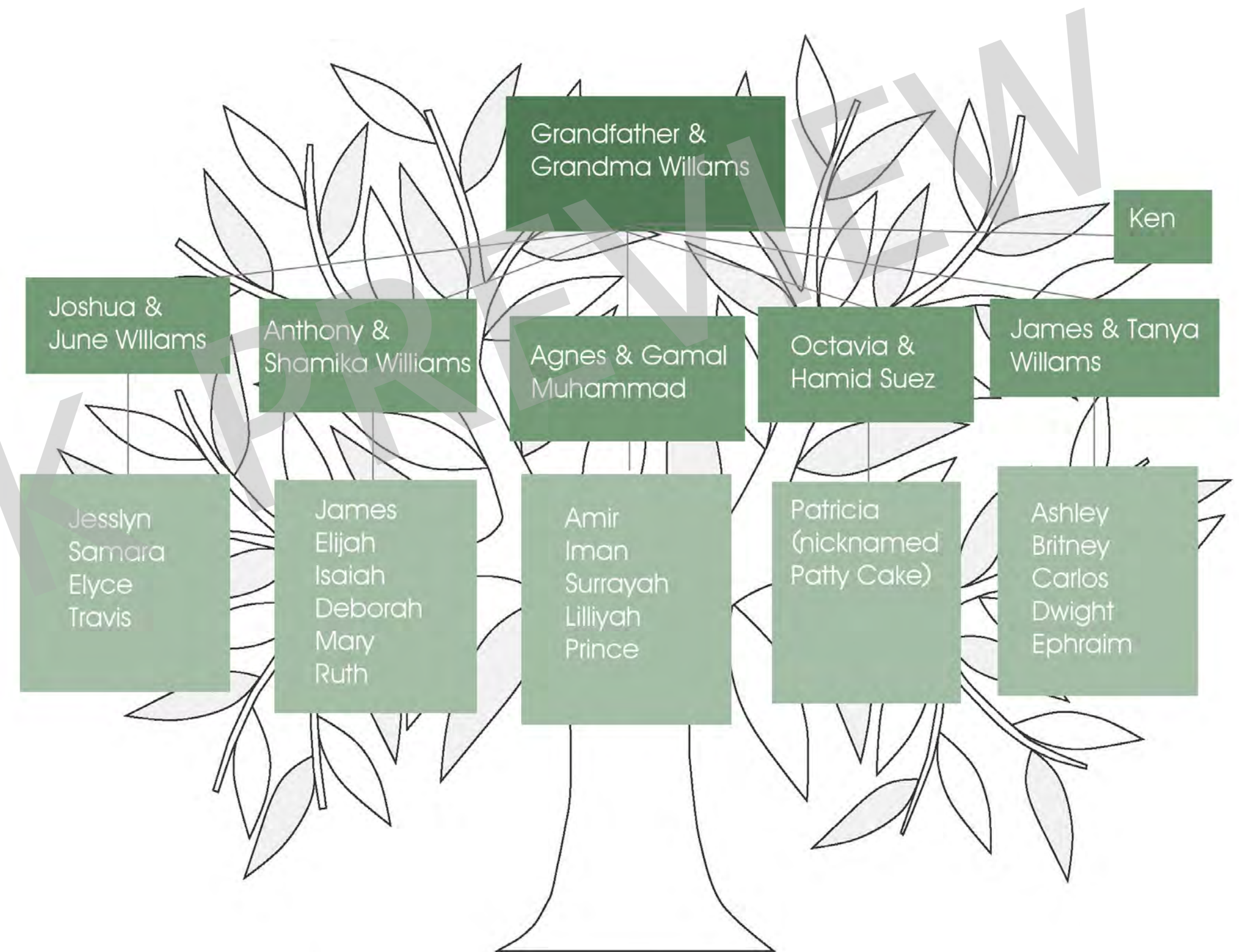
## Meet the Williams

The Williams Family is a big family, originally from Georgia. Grandfather Williams and Grandma Williams have six children, four boys (Joshua, Ken, James, Anthony) and two girls (Agnes and Octavia). The girls grew up to be very determined women who moved to Maryland to attend college, and then stayed on to become school teachers and public accountants, respectively. Both women married men of good standing. Agnes married Mr. Muhammad, a Muslim from Upper Marlboro, MD. They have four children. Octavia married Mr. Suez of Lorton, VA who died a year after their only daughter was born.

Three of Grandfather Williams' sons, have five children each. The fourth child, Ken, has no children. He is a college professor who works all the time. Like their sisters, the Williams men live and work in the DC Metro area. When this large family of twelve adults and twenty children get together, there is love, laughter and plenty to eat.

Grandfather Williams' values of hard work and discipline have been passed down to two generations. The grandchildren all do well in school, and their parents have taught them what it is to **budget**.

The stories in this book are about the grandchildren and how they respond to **budgeting**.



The Williams' Family Tree



- Lincoln Logs - \$19.89
  - Lego Car Creator - \$19.99
  - K'Nex Nascar Set - \$34.99
- 
- Acoustic Guitar - \$39.99
  - Digital Keyboard - \$24.98
  - Digital Drum Set - \$29.99
- 
- Candy Land - \$5.00
  - Cootie - \$5.00
  - Memory - \$9.99
- 
- Guess Who? - \$19.99
  - Sorry - \$14.99
  - Monopoly - \$13.99
  - Jenga - \$19.99
  - Scrabble - \$16.99
  - Twister - \$15.09

*Building Sets*

*Instruments*

*Board Games for Young Children*

*Board Games for Older Children*



# Games for Jesslyn's Birthday Party

Jesslyn's birthday is coming up, and her mom told her that she could have a party at the house and invite her friends and classmates. She feels that if she invites her friends and their younger siblings that there will be a higher probability that they will attend her party (since their parents won't have to find somewhere for the sibling to go). With this in mind, she wants to make sure that she has games that will be enjoyable for everyone.

Her mom gave her 3 \$20 bills, 4 \$10 bills, 3 \$5 bills, and 5 \$1 bills to use at Target for games and other activities.

What games and activities should Jesslyn buy for her party if she wants:

- 1 game for the younger children
- 1 building set
- 2 instruments
- 2 games for the older children



When Jesslyn told her friend Zaria about her dilemma, Zaria immediately came to the mall to help Jesslyn choose the games.

For the younger children's game, both girls agreed that Candy Land was the best game, especially since it only costs \$5.00.

For the musical instruments, they also felt that the keyboard and the drum set were the best choices since they were the cheaper options and since they could easily be recorded and saved on the computer.

For the building set, they chose the Lego Car Creator since the boys in their class loved cars and it was one of the cheaper options for the building sets.

Lincoln Logs - \$19.89  
 Lego Car Creator - \$19.99  
 K'Nex Nascar Set - \$34.99

Acoustic Guitar - \$39.99  
 Digital Keyboard - \$24.98  
 Digital Drum Set - \$29.99

Candy Land - \$5.00  
 Cootie - \$5.00  
 Memory - \$9.99

Guess Who? - \$19.99  
 Sorry - \$14.99  
 Monopoly - \$13.99  
 Jenga - \$10.09  
 Scrabble - \$16.99  
 Twister - \$15.09

Both Jesslyn and Zaria agreed on everything until it came to the games for the older children. Jesslyn was a longtime fan of Monopoly and was not willing to give up that game for the party, especially since Target sold the Championship version, which came with a trophy. Zaria, on the other hand felt that Monopoly was a never-ending game that was boring and would not entertain many of the party guests. Both girls liked Twister for the party since it was fun to see how people's body's ended up, but they also liked Jenga for the fun factor and the price. They calculated how much money they had, and then they calculated the price of their selected games.

Jesslyn's Money  
 3 x \$20 = \$60.00  
 4 x \$10 = \$40.00  
 3 x \$5 = \$15.00  
 + 5 x \$1 = \$ 5.00  
**TOTAL = \$120.00**

Selected Games  
 Monopoly \$13.99  
 Digital Drum Set \$29.99  
 Digital Keyboard \$24.98  
 Twister \$15.09  
 Jenga \$10.09  
 Candy Land \$ 5.00  
 + Lego Car Creator \$19.99  
**TOTAL = \$119.13**

Did they have enough money for all of their games?

\$120.00  
 - \$119.13  
 \$0.87

Yes, plus they had \$0.87 to spare.



## "It's Beginning to Look A Lot Like Christmas"

Christmas is Patricia's favorite holiday. She loves the cheery feeling in the air, the sparkly lights that blink at night, and the decorations everywhere. Most of all she enjoys getting ready for it.

Today Patricia and her Mom are going shopping for everything they need to make Christmas special. Her Mom says they have a budget of \$200 this year. A budget is an amount you can't go over. Patricia's Mom has a budget for everything. She says it helps her spend within her means.

"Mom, when are we leaving for the Mall," Patricia yelled from her bedroom.

"Patty Cake, as soon as we get a list together," her Mom replied.

Patricia followed the sound of her Mom's voice to the kitchen and found her sitting at a table peering through newspapers, magazines and coupons.

"What are you doing," she asked.

"I am thinking of baking Reindeer Cookies this year," her Mom mused.

"I have coupons for a lot of the ingredients. It will cost next to nothing to make," she beamed.

Mom made a few more notes in her notebook as Patricia hopped around impatiently.

"Ready," her Mom said at last.

Patricia and her Mom arrived at the Mall twenty minutes later, and upon entering Patricia's heart sank. Super Hero Bratz was on display. The tag read \$49.99. Patricia just knew \$200 would not be enough. She groaned.

"Mom is there a separate budget for toys?" she asked innocently.

"Nope," said her Mom firmly.



She and her Mom went in and out of many stores, but not once did they stop at the toy store. Shopping was all a blur for Patricia. They left the Mall three hours later with a lot of packages. At home after a cup of hot chocolate, Patricia and her Mom sat in the living room and looked over their purchases. They'd bought everything on their list.

Later that evening they put up their Christmas tree. The five new ornaments they'd bought blended well with the ornaments from previous years. And the Christmas lights made the tree come alive. Patricia and her Mom examined the tree and gave each other a hug. It was a great end to a busy day.

In two weeks they will be baking the Reindeer Cookies to take over to Aunty Tanya's for their traditional Christmas dinner.

Yes, Christmas was her favorite holiday!

Dress for Christmas Eve Services	- \$14.00
Shoes to match	- \$10.00
Ingredients (butter, flour, nutmeg, eggs, vanilla oranges, cookie cutters) for Reindeer Cookies	- \$10.00
Christmas ornaments	- \$15.00
Christmas Lights	- \$20.00
Items for making Christmas cards (construction paper, ribbons, glitter pens and foam cut outs)	- \$11.00
Gift wrapping paper and matching bows	- \$15.00
Mystery bag Mum sneaked into her room	- \$ ?

#### Solve the Problem:

Patricia and her Mom have a budget of \$200.

They spend  $\$14 + \$10 + \$10 + \$15 + \$20 + \$11 + \$15$ .

How much money did they spend altogether? \_\_\_\_\_

How much was left over? \_\_\_\_\_

Do you think the mystery bag holds a Super Hero Bratz doll for Patricia? \_\_\_\_\_

Would her Mom be able to buy the doll with what was left over? \_\_\_\_\_





## Amir's Great Reward

What a great time in the Muhammad household. Little Amir (who at 15 years old is not so little anymore) has been accepted into the National Honor Society. His parents have decided that he has earned the right, through his hard work in school, to choose a gaming system and the games to play on it. His parents have told Amir that each one of them will give him \$300.00 dollars to shop with.

So here is the list of items Amir had to choose from:

Gaming System - \$399.99  
 Wireless Controllers - \$ 54.95  
 Bluetooth Wireless Headset - \$ 34.95

Gaming System - \$299.99  
 Wireless Controllers - \$ 54.95  
 Bluetooth Wireless Headset - \$ 34.95

Gaming System - \$249.99  
 Wireless Controllers - \$ 54.95  
 Bluetooth Wireless Headset - \$ 34.95

Of course, all of Amir's buddies (boys and girls) have different suggestions as to which gaming system he should buy. Overwhelmingly, the girls want Amir to buy the wii system; they think they can beat Amir and his buddies on the wii games. Most of Amir's posse (the group of guys that he hangs with) wants him to purchase the PS3 as they see themselves battling each other on Madden in hi-definition on Amir's 60-inch Pioneer plasma HDTV.

It's anyone's guess as to what Amir will do, but in his mind, he wants to get as much as he can for the \$600.00 he has been promised. What will he do?"

Amir has decided to go shopping to see how far he can s-t-r-e-t-c-h \$600.00 dollars!

When Amir goes shopping he finds out an interesting fact. Gaming systems, accessories like controllers and headsets are all priced the same.



Amir did find his decision a difficult one after he looked at the wii, PS3 and the xbox gaming systems. But when the store manager told amir that he would hold a copy of Call of Duty – Black Ops for him (and give it to him at a reduced cost) if he bought the PS3 Gaming system from GameStop. So that made Amir's decision easy (he wanted the PS3 system anyway).

Amir's Purchase:

- Gaming system - \$399.00
  - 2 Wireless controllers - \$54.95
  - 2 Bluetooth wireless headsets - + \$34.95
- \$578.80

The total Amir spent was \$578.80. The cost of Call of Duty – Black Ops is estimated at between \$55 - \$65 dollars. So Amir did well at GameStop, and it won't be long before Amir and his buddies will be rocking Madden 11 (and Call of Duty – Black Ops ) on his PS3 system.

The Store Manager made the deal with Amir because he really liked Amir's attitude and personality. This brought a smile to Amir's face and a thought that maybe doing well in school and being a decent person comes with some great rewards.



## Mom's Ride on Metro

Elijah's mother just got great news; she landed a new job making so much more money to enjoy the best things in life. However, there is one catch. She cannot drive her car to work because the cost of parking is much too high. So what can she do? Take the METRO!

Elijah's mother believes that she can set aside \$150.00 a month for transportation to and from her new job. She did some research and found out that she can purchase a SmarTrip card that will help her manage that monthly fare budget. The \$3.00 dollars that Mom will pay everyday on the bus to travel back and forth to work will cost her \$90.00 a month (30 days).

However, the bus is not convenient for Elijah's mom to catch every morning. The walk to the bus stop is a few blocks away and the timetable doesn't fit her schedule. The train station is right across the street from the condo she lives in, and the total train ride will take her only 43 minutes. Her concern is the fact that the train fare is \$8.20. She wonders if her \$150.00 budget will cover her train fare.

### 1 FIND YOUR ONE-WAY FARE

Destination	Line	Travel Min.	Fares when using a paper Farecard			Destination
			Regular	Reduced	Peak-of-the-Peak	
Addison Road-Seat Pleasant	Blue	49	4.60	3.00	4.80	Largo Town Center
Anacostia	Green	36	4.05	2.40	4.25	McPherson Sq
Archives-Navy Mem'l-						Medical Center
Penn Quarter	Green/Yellow	27	3.45	2.40	3.65	Metro Center
Arlington Cemetery	Blue	35	4.15	3.00	4.35	Minnesota Ave
Ballston-MU	Orange	41	4.65	3.00	4.85	Morgan Boulevard
Benning Road	Blue	43	4.10	2.40	4.30	Mt Vernon Sq/7th St-
Bethesda	Red	38	4.60	3.00	4.80	Convention Center
Braddock Road	Blue/Yellow	44	5.20	3.00	5.40	Navy Yard
Branch Ave	Green	49	5.20	3.00	5.40	Naylor Road
Brookland-CUA	Red	12	2.45	1.85	2.65	New Carrollton
Capitol Heights	Blue	46	4.35	3.00	4.55	New York Ave-Florida
Capitol South	Blue/Orange	35	3.65	2.40	3.85	Gallaudet U
Cheverly	Orange	47	4.15	2.40	4.35	Pentagon
Clarendon	Orange	37	4.40	3.00	4.60	Pentagon City
Cleveland Park	Red	29	3.85	2.40	4.05	Potomac Ave
College Park-U of Md	Green	3	2.20	1.85	2.40	Prince George's Plaza
Columbia Heights	Green/Yellow	12	2.90	1.85	3.10	Rhode Island Ave-Bre
Congress Heights	Green	39	4.35	3.00	4.55	Rockville
Court House	Orange	35	4.25	3.00	4.45	Ronald Reagan Washi
Crystal City	Blue/Yellow	37	4.40	3.00	4.60	National Airport
Deanwood	Orange	45	4.00	2.40	4.20	Rosslyn
Dunn Loring-Merrifield	Orange	53	5.25	3.00	5.45	Shady Grove

COINS  
5,10,25¢

TO ADD VALUE

STAR

VISA

MALC

MasterCard

ENT  
PIN

First, she needs to calculate how much money she will spend for the entire month (30 days).

$$\$8.20 \times 30 = \$246.00$$

The she can take away her total from her monthly budget.

$$\begin{array}{r} \$150.00 \\ -\$264.00 \\ \hline -\$114.00 \end{array}$$

No, Elijah's mother does not have enough money to ride the train every day.





## James Goes Outerwear Shopping for the Fall Party

James is a popular student in his class and was invited to a classmate's fall party. Of course, as the popular student, James will have to ask his mother for money so will be able to look his best at the party. James is use to getting whatever he wants from his mother as the oldest child, but this year his mother is feeling the effects of the failing economy, which means his spending at the mall for clothing will be on a strict budget. James likes to be sneaky and keep the change after spending his mother's money, so he will be looking to save as much money as possible during his shopping. During the fall season outerwear is extremely important due to the drop in temperature, so James will go the Prince George's Mall to do his shopping. Like most males, James only does his shopping at a few stores and knows exactly what he wants from each store. The two stores he will buy his outerwear from will be Downtown Locker Room (DTLR) and Gap for Kids. Also this mall has a sale on outerwear in every clothing store throughout the mall. The budget given to James for his outerwear shopping is \$120.00, and his mother will allow him to buy a pair of boots, a hat, and a scarf for the party.

James will first look to buy the most expensive item, which is the pair of boots. He chose to look in DTLR for the boots and was able to find three boots that matched most of his wardrobe at home perfectly. He would usually be able to purchase all three of these boots, but his budget only allows him to buy one pair of boots. Each pair of boots has a reduced price, and James wants to figure out how much money has been taken from the original price of each pair of boots in order to save as much money as possible. Which pair of boots will save James the most money?

**Answer:** To determine the pair of boots that would save James the most money you will have to use subtraction. The subtraction will reveal that the Timberland Tan Leather and Fabric Field boots will save James the most money.

Boot Names	Original Prices	Discounted Prices
Timberland Tan Leather Waterproof Field boots	\$72.99	\$59.99
Timberland Black Leather Waterproof Field boots	\$85.99	\$75.00
Timberland Olive Green Leather and Fabric Field boots	\$75.99	\$63.00

\$72.99	\$85.99	\$75.99
<u>-\$59.99</u>	<u>-\$75.00</u>	<u>-\$63.00</u>
\$13.00	\$10.99	\$12.99

The next items James will look to purchase will be the accessories and the jacket he wanted for the party from Gap for Kids. This particular store has a 50% discount on all outerwear. James noticed a few items that caught his interest that included two jackets, three hats, and three scarves. Our budget will allow James to choose one hat, one scarf, and one jacket. James feels that he is the most popular in his class and he should only have the most expensive jacket, scarf, and hat for the party. Which item will be the most expensive after the 50% discount is subtracted from the original price of each item?

**Answer:** To determine the answer to the question you will have to first divide the discount percentage by 100 to change the discount percentage into decimal form (ex.  $50/100 = .50$ ).

Clothing Item	Amount Taken Off	Discounted Price
	Original Price:	
Gray Wool Jacket:	$.50 \times \$72.00 = \$36.00$	$(\$72.00 - \$36.00 = \$36.00)$
Black Peacoat:	$.50 \times \$65.00 = \$32.50$	$(\$65.00 - \$32.50 = \$32.50)$
Black Pro Fleece Beanie:	$.50 \times \$10.00 = \$5.00$	$(10.00 - 5.00 = \$5.00)$
Gray Pro Fleece Beanie:	$.50 \times \$12.50 = \$6.25$	$(12.50 - 6.25 = \$6.25)$
Black Pro Fleece Trapper Hat:	$.50 \times \$11.00 = \$5.50$	$(11.00 - 5.50 = \$5.50)$
Black Pro Fleece Scarf:	$.50 \times \$10.50 = \$5.25$	$(10.50 - 5.25 = \$5.25)$
Gray Pro Fleece Scarf:	$.50 \times \$14.00 = \$7.00$	$(14.00 - 7.00 = \$7.00)$
Green Pro Fleece Scarf:	$.50 \times \$13.00 = \$5.50$	$(13.00 - 5.50 = \$5.50)$

**Final Question:** Remember that James is sneaky and he wants to keep the change leftover from the money his mother gave him to shop with for the party. How much change will he be able to keep after buying the jacket, hat, scarf, and the boots?

**Answer:** To determine the answer to the question you will have to first use addition to add the price of each item to come up with the total sum of all the outerwear James purchased. Then you will take the sum of the purchased outerwear and subtract it from the total amount of the money given to James from his mother.

$\$ 59.99$  Timberland Tan Leather Waterproof Boots  
 $\$ 36.00$  Gray Wool Jacket  
 $\$ 7.00$  Gray Pro Fleece Scarf  
 $+\$ 6.25$  Gray Pro Fleece Beanie  
 $\$109.24 =$  Total sum of all outerwear purchased

$\$120.00 =$  Total of budget  
 $- \$109.24 =$  Total sum of all outerwear purchased  
 $\$ 10.76 =$  Total amount saved by James





Hamburger Meat (1lb) -	\$5.99
Steak (4 pack) -	\$8.99
Ham -	\$7.58
Ribs -	\$6.97
<hr/>	
Salad (2 bags) -	\$5.00
Scalloped Potatoes -	\$1.77
Sugar Snap Peas -	\$2.49
Broccoli and Cauliflower Medley -	\$2.48
<hr/>	
Hawaiin Sweet Rolls (4 rolls) -	\$0.94
Kaiser Rolls -	\$2.29
Sandwich Rolls -	\$1.36
<hr/>	
Chocolate Milk -	\$3.99
Sprite -	\$1.79
Root Beer (6 pack) -	\$3.50
Cranberry Grape Juice -	\$1.75
Water (8 bottles) -	\$3.23
<hr/>	
Ice Cream -	\$2.99
Brownies -	\$1.44
Chocolate Frosted Donuts -	\$1.99
Cinnamon Cake -	\$3.49

### Meats

### Sides

### Breads

### Drinks

### Desserts

## Ashley's First Sunday Dinner

Sunday is quickly approaching and there is work to be done! Ashley's mother has decided the time is now for Ashley to learn how to prepare a meal for the family. Ashley must prepare a meal for her family while using a specific budget provided by her mother. This means Ashley must plan out her meal and go to the grocery store to price the various items. Her mother explains to Ashley that she must include a meat, vegetable, bread, drink, and dessert. The meal is to serve four people.

She gives her: 2 \$10 Bills, 2 \$5 Bills, and 5 \$1 Bills

Which food should Ashley choose in order to stay within the given budget?

How much of each item will Ashley need?





Hamburger Meat (1lb) -	\$5.99
Steak (4 pack) -	\$8.99
Ham -	\$7.58
Ribs -	\$6.97
<hr/>	
Salad (2 bags) -	\$5.00
Scalloped Potatoes -	\$1.77
Sugar Snap Peas -	\$2.49
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Ice Cream -	\$2.99
Brownies -	\$1.44
Chocolate Frosted Donuts -	\$1.99
Cinnamon Cake -	\$3.49

**Ashley's Budget**

2 \$10 Bills =	2 x \$10 =	\$20
2 \$5 Bills =	2 x \$5 =	\$10
5 \$1 Bills =	5 x \$1 =	\$5
<hr/>		
Total Amount =	\$20 + 10 + 5 =	<b>\$35</b>

Meats

Sides

Breads

Drinks

Desserts

**Ashley's Grocery List**

Food	Quantity	x Price =	Subtotal
<i>Ashley will be able to choose the following items to stay within the budget:</i>			
Hamburger Meat (1 lb)		\$5.99	
Salad (2 bags)		\$5.00	
Hawaiian Sweet Rolls (4 rolls)		\$0.94	
Root Beer (6 pack)		\$3.50	
Cinnamon Cake		\$3.49	
Total :			<u>\$18.92</u>

Which bills should Ashley hand to the cashier?

1 -	\$10
1 -	\$5
4 -	\$1
	<u>\$19</u>

How much money will Ashley have left over?

\$35.00
<u>- \$18.92</u>
\$16.08

Can Ashley purchase anything else with the change? If so, what can she purchase?

# Area Map



# Store Directory