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ABSTRACT

This booklet is intended to help mainstreamed mentally retarded, emotionally disturbed, or learning disabled high school students acquire a basic understanding of the responsibilities and working conditions of waiters/waitresses and to practice basic math skills necessary in the occupation. The first section provides a brief introduction to the occupation by focusing upon those job tasks of a waiter/waitress with which the student is likely to be familiar. The next two sections deal with the work environment of the typical waiter/waitress and the training, education, and experience needed for the occupation. Exercises addressing basic math skills used by waiters/waitresses are provided. Various suggestions are listed for students interested in further exploring the occupation of waiter/waitress. A glossary and answer sheet conclude the booklet. (KC)

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MATH on the job

Waiter/Waitress

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- Generating knowledge through research
- Developing educational programs and products
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MATH ON THE JOB:

WAITER/WAITRESS

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MATH on the job

Waiter/Waitress

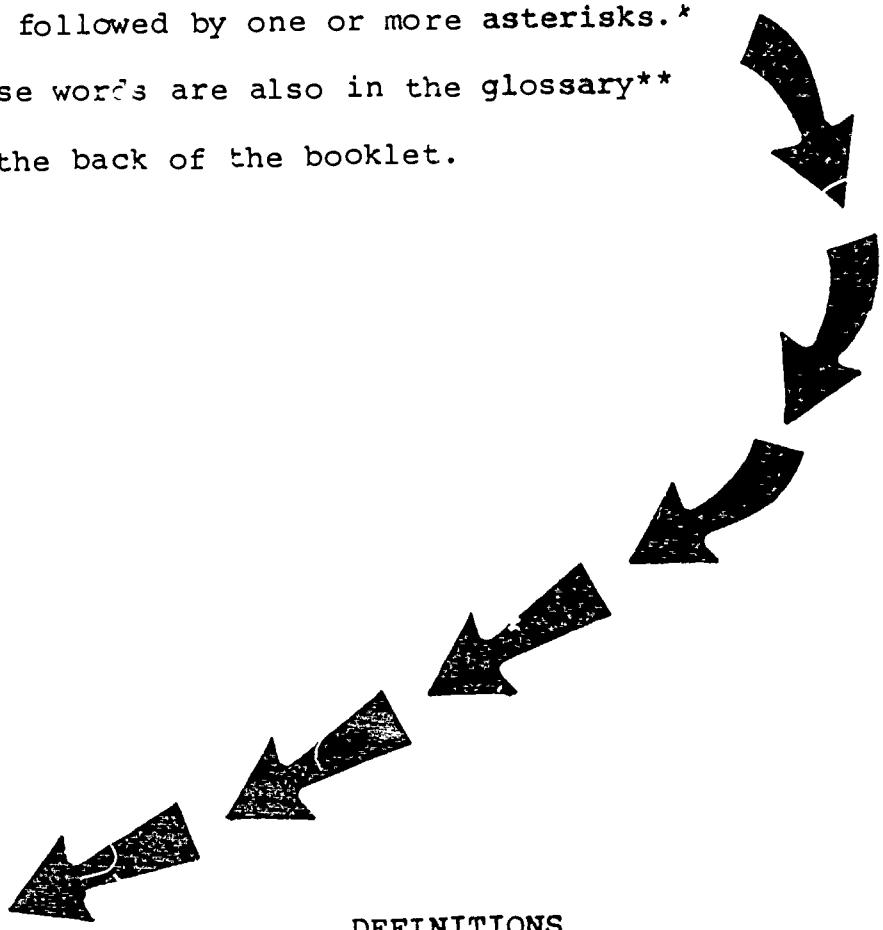
In this booklet, you can--

- find out what a waiter/waitress does
- see how a waiter/waitress uses math
- get a chance to use math as a waiter/waitress
- find out the types of things that a waiter/waitress needs to know
- find out what courses, training, and experience you need to become a waiter/waitress

SPECIAL WORDS USED IN THIS BOOKLET

Workers in many jobs use special words or special meanings for words. Learning these words helps you to learn about a job.

You will find some of these special words in this booklet. When these words, and some hard words, are used for the first time, they are followed by one or more **asterisks.*** These words are also in the **glossary**** at the back of the booklet.



DEFINITIONS

*An asterisk (*) is a symbol that tells you to look at the bottom of the page for the meaning, or definition, of the word.

**A glossary is a list of words with their meanings.

CONTENTS

HAVE YOU EVER? 1

WHAT DOES A WAITER/WAITRESS DO? 2

WHERE DOES A WAITER/WAITRESS WORK? 8

WHAT TRAINING, EDUCATION, AND EXPERIENCE DO YOU NEED TO BECOME A WAITER/WAITRESS? 12

DO YOU WANT TO DO MORE WAITER'S/WAITRESS' MATH? . 14

DO YOU WANT TO EXPLORE SOME MORE? 17

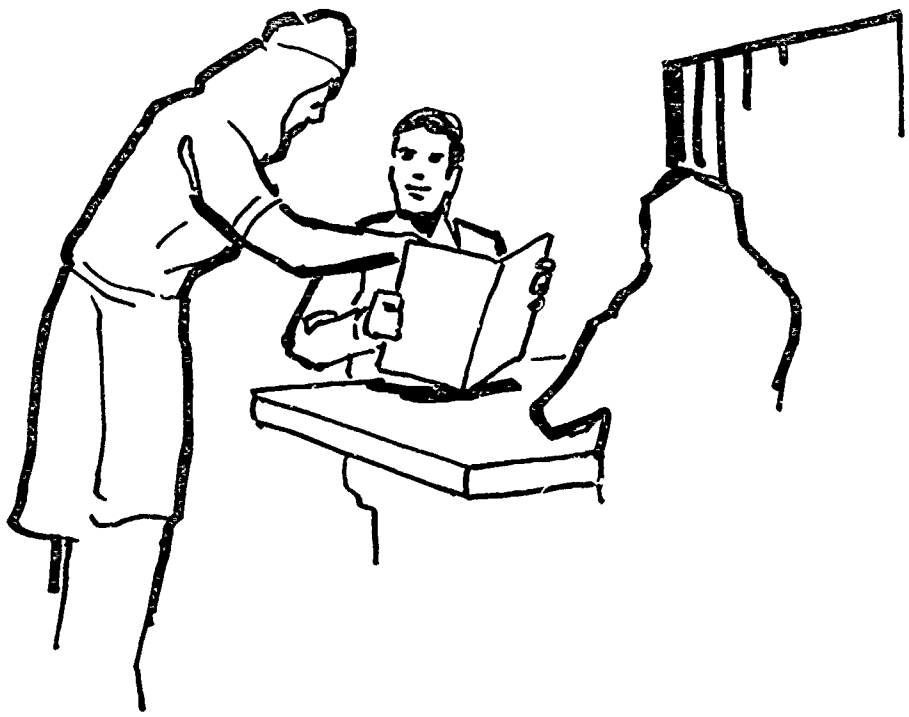
GLOSSARY 19

ANSWER SHEET 20

HAVE YOU EVER...

- set the table for a meal at home?
- served food to your family?
- eaten at a restaurant?
- watched a waiter or waitress serve food to customers?

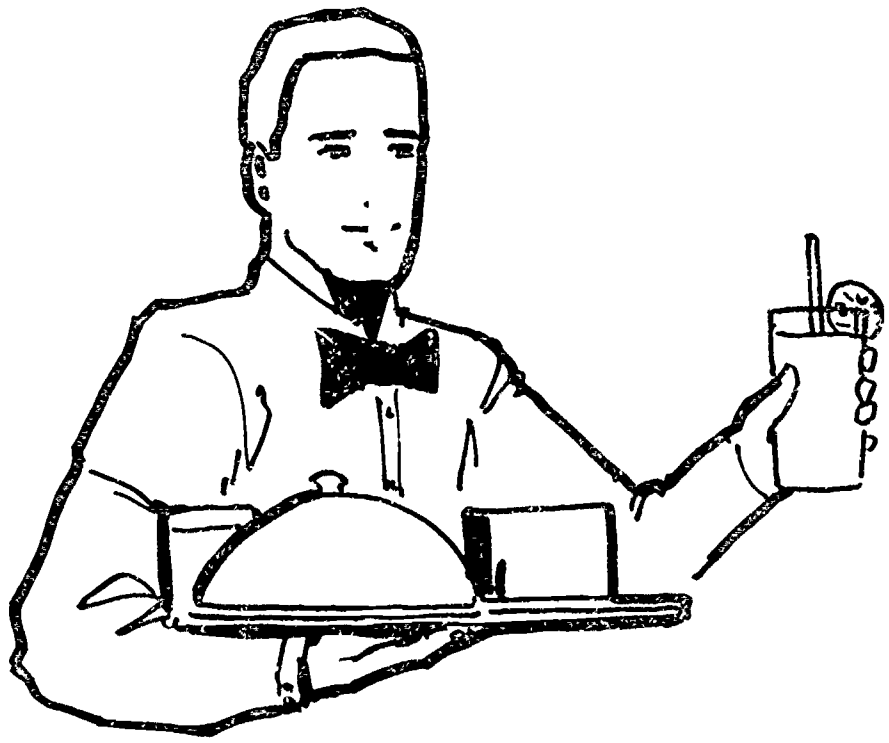
If you have, then you have some idea about the work that a waiter/waitress does. This booklet will help you learn about the work of a waiter/waitress and how math is important to do the job.



WHAT DOES A WAITER/WAITRESS DO?

A waiter/waitress takes orders for and serves food and beverages. How does a waiter/waitress do this? As a waiter/waitress, you--

- ask customers for food and beverage orders
- listen carefully to what customers order
- write orders neatly on a food check
- give food orders to the cook
- serve the food to the customers who ordered it



A waiter/waitress uses math on the job every day. As a waiter/waitress, you--

- count, add, subtract, multiply, and divide
- use whole numbers and decimals
- read menus* with price lists
- record the prices of food and beverages on guest checks**
- figure out sales tax
- total the customers' checks

DEFINITIONS

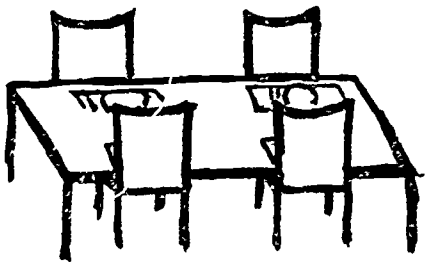
*A menu is a list of foods one can order in a restaurant. Menus give the choices and the prices of food.

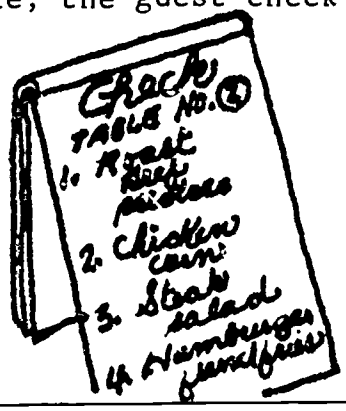
**A guest check is a slip of paper showing the amount of money the customer must pay for the food ordered: the bill.

A waiter/waitress uses math to count customers and meals.

EXAMPLE

The restaurants you work in will have either tables or booths. The table below has room for four customers. The guest check for this table should list a meal for each customer. In this example, the guest check lists four meals.





NOW YOU TRY IT

Practice Exercise A

1. The restaurant where you work has booths which can seat 6 people. Every seat in booth #10 has a customer in it. How many meals should you list on booth #10's guest check?

2. You are serving two tables of customers. One table has 4 customers and the other has 5. How many meals will you be bringing from the kitchen?

3. Three couples come to the restaurant for lunch. One of the couples wants a separate check. How many meals should be on the other customers' check?

4. Table #16 has room for 8 customers. There is one empty chair right now. All but one of this table's customers have ordered coffee. How many cups of coffee should you bring?

5. Some customers came to your restaurant for a big dinner party. You were able to put one 6-person table together with two 4-person tables and have just enough seats. If their dinners are all written on one guest check, how many meals should be on the check?

A waiter/waitress uses math to read prices listed on a menu.

EXAMPLE

A customer orders a piece of chocolate cake from the dessert menu shown below. You must write the correct price on the customer's check. This menu says that chocolate cake costs $1.25 per piece. You would write $1.25 on the customer's check.

DESSERT MENU

Chocolate Pudding	.95	Shortcake	1.50
Ice Cream	.75	Chocolate Cake	1.25
Ice Cream added to pie or cake	.50	Cheesecake	1.75
Cream Pie	1.30	Fruit Pie	1.25

NOW YOU TRY IT ↓

Practice Exercise B

Use the dessert menu in the example above for problems 6-10.

6. A customer orders shortcake from the dessert menu. How much should be added to the customer's check?

7. A hungry customer wants both shortcake and chocolate pudding for dessert. How much should be added to the customer's check?

8. A customer asks how much apple pie with ice cream costs. What would you answer?

9. Two customers decide to order dessert. One orders chocolate cake and the other orders shortcake. How much should be added to their check?

10. A table of five customers orders dessert. One customer orders fruit pie. Another customer orders chocolate cake with ice cream. The rest of the customers order cream pie. What is the total dessert cost to be added to the check?

A waiter/waitress uses math to total the customers' checks.

EXAMPLE

Waiters and waitresses use calculators or cash registers to add the costs of food items ordered by customers. What is the total cost of food for the sample guest check? You're right if you said $3.10.

GUEST CHECK	
Table No. 16 No. of Guests 1	
Vegetable Soup	.60
Ham Sandwich	1.95
Lemonade	.55
TOTAL	

NOW YOU TRY IT

Practice Exercise C

GUEST CHECK	
1. fried Chicken	3.75
Coffee	.40
apple pie	1.10
2. Tuna Sandwich	2.15
fruit cup	1.05
Milk	.75
3. Pizza bagel	1.85
Cola	.65
Hot fudge sundae	1.45
4. meatball Sub	2.69
french fries	.79
Iced tea	.50
TOTAL	

Use the guest check to the left to find--

11. the cost of the first customer's meal.

12. the cost of the second customer's meal.

13. the cost of the third customer's meal.

14. the cost of the fourth customer's meal.

15. the total cost of the check.

A waiter/waitress uses math to calculate sales tax.

EXAMPLE

Each state in the U.S. has a different law for tax on food purchases. In Ohio, there is no tax on take-out food purchases, but food that is eaten inside the restaurant is taxed at 5-1/2%. A guest check totalling $10.00 would require the addition of how much sales tax?

You're right if you said $.55.

NOW YOU TRY IT

Practice Exercise D

For questions 16-21, calculate the amount of sales tax based on the customers' check and the state's sales tax rate.

	Total of Check	Sales Tax Rate	Amount of Sales Tax
16.	$ 2.00	10%	?
17.	$17.50	6%	?
18.	$ 4.95	4%	?
19.	$12.25	4%	?
20.	$48.34	3%	?
21.	$94.99	5-1/2%	?

WHERE DOES A WAITER/WAITRESS WORK?

A waiter/waitress may work in many different types of restaurants. As a waiter/waitress, you could work in--

- a small restaurant such as a diner, a sandwich shop, or a coffee shop
- a large, formal restaurant such as a supper club or hotel restaurant
- a hotel as a room service waiter/waitress
- a private club

In small and large restaurants alike, you will do the same basic tasks. You will write down orders for food, serve food and beverages, and make out guest checks.

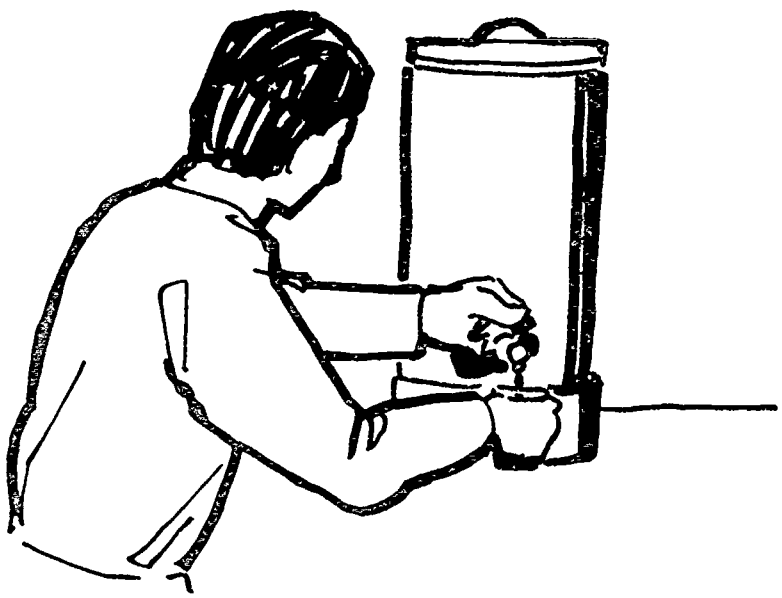
A waiter/waitress works with other food service workers as a team to give customers good service. As a waiter/waitress, you may work with--

- a host or hostess who shows the customers where to sit and gives each customer a menu
- a cook who reads the written food orders and prepares the food
- bussers who help in setting tables, pouring coffee, refilling water glasses, and removing dirty dishes
- other waiters/waitresses who take customers' orders for food, serve the food, and total the customers' guest checks
- a restaurant manager who supervises the work of all the food service workers in the restaurant

And, of course, you will work with customers. Customers will select the food and beverages they want, give you their orders, and pay the guest checks.

As a waiter/waitress, you will use special types of equipment to do your work. In a restaurant, you will use--

- eating utensils, such as knives and forks, to set tables
- a beverage fountain* for soft drinks such as soda pop
- a steam table** to keep food warm
- a microwave oven to heat or re-heat food such as sandwiches and dinner rolls
- an industrial-sized*** coffee maker
- a cash register



DEFINITIONS

*A beverage fountain is a piece of equipment used to store and pour soft drinks. A beverage fountain prevents the drinks from going flat.

**A steam table is a piece of equipment where steam from hot water keeps pans of food warm.

***Industrial-sized means that something is quite big. An industrial-sized piece of equipment, such as a coffee maker, is used to prepare large amounts of a substance.

IF YOU ARE INTERESTED IN

THE WORK OF A WAITER/WAITRESS

AND WOULD LIKE TO KNOW MORE,

READ ON

WHAT TRAINING, EDUCATION, AND EXPERIENCE DO YOU NEED TO BECOME A WAITER/WAITRESS?

What type of restaurant would you like to work in? Would you like to work for a big restaurant or a small one? The answer to these questions can make a difference in the training, education, and experience you need to become a waiter/waitress.

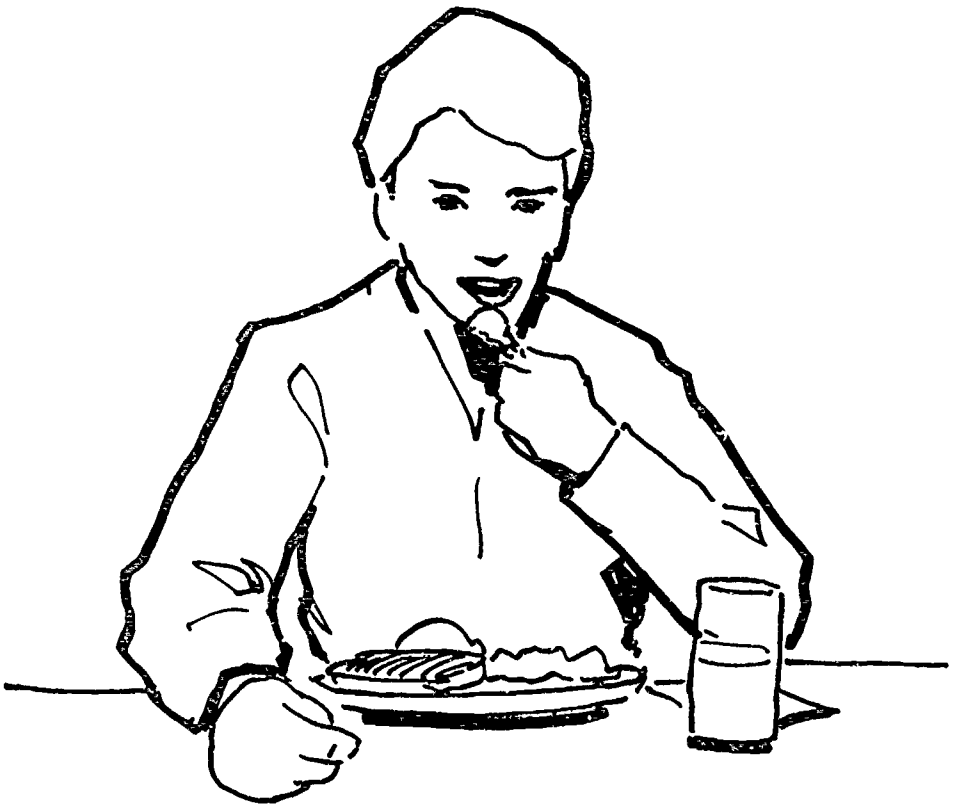
While you don't need much training to do the job of a waiter/waitress, you should be a high school graduate. You probably will receive training on the job. But you can get a much better job and a higher salary if you learn about restaurant work from classes and/or other jobs.

To get a job as a waiter/waitress, you need to know how to--

- set up and clear tables
- remember things such as items and prices on a menu
- operate a cash register
- serve food properly
- read, write, and do math

The best way to learn these things is to take food service classes at your high school. Some employers may want waiters/waitresses to get additional training at college or business school. Your local vocational education center or community college should offer courses that will help you.

Taking every chance to learn new skills and tasks will help you do a better job. Good math skills will also help you perform your work as a waiter/waitress.



DO YOU WANT TO DO MORE WAITER'S/WAITRESS' MATH?

Practice Exercise E

22. You are serving customers at a banquet. There are 20 tables. Each table seats 6 people. At the most, how many meals will you serve?

23. The chef prepared 40 steak dinners, 50 chicken dinners, and 35 veal dinners for a banquet. Afterwards, there were 3 steak, 13 chicken, and 8 veal dinners left over. If each banquet guest ate one meal, how many customers were at the banquet?

24. You are serving prime rib dinners to wedding reception guests. There are 4 round tables which seat 8 people each, 8 square tables which seat 4 people each, and 16 rectangular tables which seat 12 people each. You count 7 empty chairs. How many dinners do you need?

25. The party house where you work will serve 5 banquets this week. It is expected that there will be 175 people at the first, 250 at the second and third, 135 at the fourth, and 316 at the fifth banquet. Half of these people will probably want appetizers. About how many appetizers will you serve this week?

Practice Exercise F

Use the menu below to answer problems 26-30.

MENU

Appetizers		Dinners	
Vegetable Soup	1.15		
Shrimp Cocktail	4.95	Baked Pork Chops	9.95
Garden Salad	1.25	Chicken Tarragon	10.95
		Filet Mignon	15.95
Desserts		Beef Wellington	11.95
Cake	1.95		
Ice Cream	.75		
Coffee/Tea	.50		

26. A table of three customers has finished dinner. One customer orders cake and coffee for dessert. The other 2 customers order just coffee. How much should be added to their check?

27. Before 7:00 p.m., shrimp cocktail is on special and costs $1 less. At a table of 6 customers, everyone orders shrimp cocktail except 2 people. If it is before 7:00 p.m., how much will the total appetizers cost?

28. From 4:00-6:00 p.m., the restaurant has a dinner special where all dinners are 20% off. What is the special price charged for the chicken tarragon?

29. A rich and hungry customer wants to taste everything on the menu. How much will you charge if the customer orders one of each item?

30. There are 50 people at a banquet. Half of them have ordered shrimp cocktail and baked pork chops. The other half have ordered garden salad and beef wellington. What is the total cost of the food?

Practice Exercise G

GUEST CHECK	
1. 2 hamburgers (1.49 each)	
chocolate shake	.49
2 liver and onions	2.89
coffee	.50
pecan pie	1.75
3. steak sandwich	3.29
2 orders onion rings (.79 each)	
4. Macaroni and cheese	2.19
Chef salad	1.49
tomato juice	.75
TOTAL	

Use the guest check to the left to find--

11. the cost of the first customer's meal.

12. the cost of the second customer's meal.

13. the cost of the third customer's meal.

14. the cost of the fourth customer's meal.

15. the total cost of the check.

Practice Exercise H

36. What is the sales tax on a guest check totalling $129.75, if the tax rate is 4-1/2%?

37. If the sales tax rate is 6-1/4%, what is the sales tax on a guest check totalling $73.86?

38. The restaurant where you work must charge 8% sales tax on all purchases. What is the sales tax on a guest check for two pieces of cake ($1.65 each) and two cups of coffee (60¢ each)?

39. A customer comes to the cash register to pay for her meal. The guest check has a $7.95 dinner, a $2.50 appetizer, a $4.25 bar bill and a $1.95 dessert. The sales tax rate is 6%. What is the amount of sales tax to be added?

40. For tables of 8 or more customers, a 15% gratuity (tip) is added automatically to the check. The table you serve has 10 customers. Their check totalled $211.18. What amount of gratuity should be added?

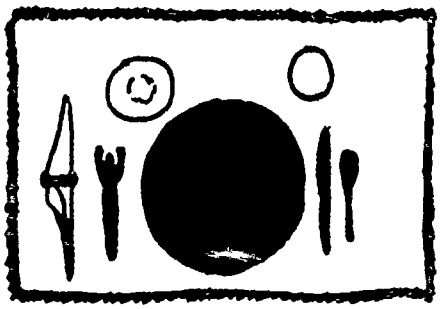
DO YOU WANT TO EXPLORE SOME MORE?

1. Go to a restaurant. Watch the waiters/waitresses do their work. Think about what you like and what you do not like about the service they give you and other customers. Write down some of the things you think should be done to provide excellent service to customers.

2. Get menus from different types of restaurants. Read them. Compare the kinds of food listed. Compare the prices.

3. Visit three restaurants of different sizes, such as a small restaurant, a large restaurant, and a fast-food restaurant. Try to make your visits to the three restaurants at about the same time of day. Observe the waiter/waitress, or food server, for 15 minutes in each restaurant. Write down the tasks you see them perform within a 15-minute time period. Compare your three lists of tasks for the different workers. Would you like to work in the restaurants you visited? Why or why not?

4. Set the table for a family meal. Place the glasses, silverware, napkins, and plates in the positions shown below. Serve a meal to your family.



5. Practice such things as--

   - introducing yourself
   - asking questions such as--
     - May I take your order?
     - Is there anything else I can get you?
     - Would you like to order dessert?
     - Would you like more coffee?

6. Practice such things as--

   - clearing dishes from a table and washing the table
   - memorizing a list of five or six kinds of pie or other desserts
   - adding prices of two or more items listed on a menu

7. Are you interested in other jobs in food service?

   - Food counter workers serve customers food that can be prepared quickly.
   - Flight attendants serve passengers on airplanes.
   - Butlers/maids serve people in their homes.
   - Hosts and hostesses greet customers and show them to their tables.
   - Bellhops help hotel customers with their luggage and do errands.

   You can do these jobs without all the math skills listed in this booklet, but you can do a better job if you have math skills. Part of doing your work well is doing the math needed on the job.

GLOSSARY

Asterisk (*):	a symbol that tells you to look at the bottom of the page for a meaning, or definition, of the word.
Beverage fountain:	a piece of equipment used to store and pour soft drinks. A beverage fountain prevents the drinks from going flat.
Glossary:	a list of words with their definitions.
Guest checks:	a slip of paper showing the amount of money the customer must pay for the food ordered; the bill.
Industrial-sized:	something that is quite big. An industrial-sized piece of euqipment, such as a coffee maker, is used to prepare large amounts of a substance.
Menu:	a list of foods one can order in a restaurant. Menus give the choices and the prices of food.
Steam table:	a piece of equipment where steam from hot water keeps pans of food warm.

ANSWER SHEET

Practice Exercise A

1. 6
2. 9
3. 4
4. 6
5. 14

Practice Exercise B

6. $1.50
7. $2.45
8. $1.75
9. $2.75
10. $6.90

Practice Exercise C

11. $ 5.25
12. $ 3.95
13. $ 3.95
14. $ 3.98
15. $17.13

Practice Exercise D

16. $0.20
17. $1.05
18. $0.20
19. $0.49
20. $1.45
21. $5.22

Practice Exercise E

22. 120
23. 101
24. 249
25. 563

Practice Exercise F

26. $ 3.45
27. $ 15.80
28. $ 8.76
29. $ 59.35
30. $702.50

Practice Exercise G

31. $ 4.97
32. $ 5.14
33. $ 4.87
34. $ 4.93
35. $19.91

Practice Exercise H

36. $ 5.84
37. $ 4.62
38. $ 0.36
39. $ 1.00
40. $31.68