Pre-Lesson Vocabulary Practice

The words on the right appear in Lesson 6. Read the words and the definitions below. Next find them in the lesson. Carefully read the lesson material to better understand their meanings. Then match each term to its definition.

_____ ❶ clock times that state when a train, bus, etc., reaches its destination

_____ ❷ schedules that show the times when things happen

_____ ❸ clock times that state when a train, bus, etc., leaves

_____ ❹ "kinds" or "types" of something

_____ ❺ an amount of money one has to pay for a transportation service

_____ ❻ trips that are arranged according to specific times

_____ ❼ the mechanism that displays the taxi fare

_____ ❽ parts of something

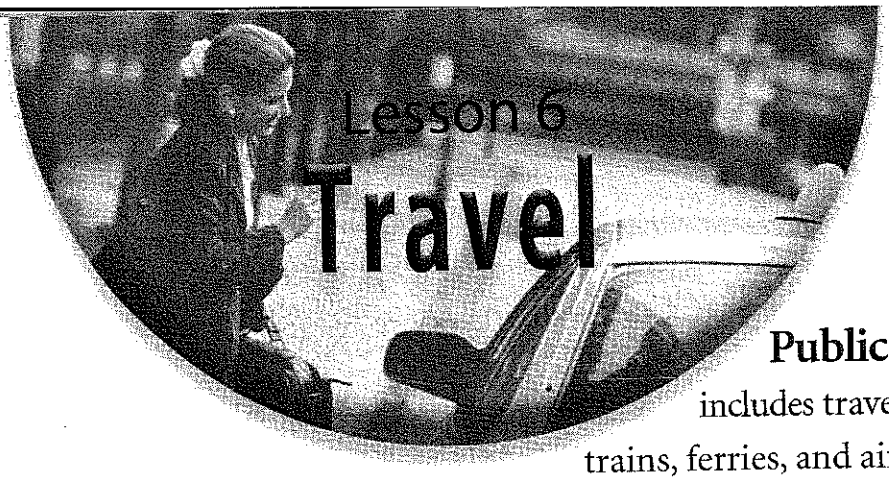
_____ ❾ an amount of money charged

a. arrival times
b. departure times
c. fare
d. fee
e. meter
f. modes
g. scheduled trips
h. segments
i. timetables

Work with a partner. Use each of the terms listed below in a sentence of your own.

blocked traffic or **stuck in traffic** – vehicles that can't move
common practice – something people usually do
delay or **waiting time** – the cost charged by a taxi when it's not moving
evenly – equally, the same amount per person
express trains (E) – trains that go from one place to another without stopping
initial fee – the first amount of money charged
local trains (L) – trains that travel only within a specific area or region
monthly pass – travel fare for an entire month
off-peak – a time when a lot of people do not travel
on-board fare – the price charged for a ticket on the train
one-way (OW) – in only one direction
peak – a ticket for travel during a time when a lot of people travel; peak ticket
round-trip (RT) – to go both "to" and "from" a particular place
running on schedule – keeping the schedule; staying according to the schedule

Answers are on page 259.



Lesson 6

Travel

Public transportation

Public transportation includes travel on buses, taxis, subways, trains, ferries, and airplanes. The **fare** that a customer pays to ride some **modes** of public transportation, such as ferries and airplanes, is set by the companies that own and operate the equipment. For taxis, local agencies control the licensing of the drivers and the fares that are charged.

The cost of a ride in a taxi varies from community to community. Often there is an initial **fee** as well as an additional fee for each fraction of a mile the customer travels. In the United States it is customary to give a taxi driver a tip of 10% to 15% of the amount on the taxi **meter**. (You will learn more about the costs of the most popular form of private transportation, the automobile, later in this book.)

Example 1 In Boston, the cost of a taxi ride is \$1.80 for the first $\frac{1}{8}$ mile and \$0.30 for each additional $\frac{1}{8}$ mile. What is the cost of a $2\frac{1}{2}$-mile taxi ride in Boston including a 15% tip?

Solution First find the number of $\frac{1}{8}$-mile segments in $2\frac{1}{2}$ miles.

$$2\frac{1}{2} \div \frac{1}{8} = \frac{5}{2} \times \frac{8}{1} = \frac{40}{2} = 20 \text{ segments}$$

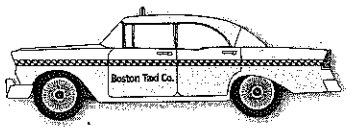
The first $\frac{1}{8}$ mile costs \$1.80.

The next 19 segments cost $19 \times \$0.30 = \$5.70$.

The total fare is $\$1.80 + \$5.70 = \$7.50$.

A 15% tip is $0.15 \times \$7.50 = \$1.125$ or \$1.13.

The fare including a 15% tip is $\$7.50 + \$1.13 = \$8.63$.



It is a common practice to round a number like \$8.63 to a more convenient number in our money system, such as \$8.75 or even \$9.00.

Train, airplane, and bus companies publish **timetables** that show **departure times** and **arrival times** for their **scheduled trips.** It is sometimes difficult to determine how much time a trip requires. Travel time is simply the arrival time minus the departure time.

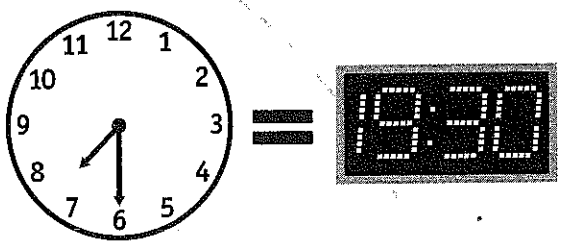
Example 2 If Ruth gets on the bus at her corner at 8:05 in the morning and gets off near her office at 8:30 in the morning what is her travel time?

Solution To find Ruth's travel time, subtract.

8:30 – 8:05 = 25 minutes

To calculate travel time for a trip, remember that an hour has 60 minutes and that a day has 24 hours. We usually divide the 24 hours in a day into two twelve-hour periods. To calculate travel time, it is sometimes convenient to use a 24-hour clock.

On a 24-hour clock, any time before noon remains the same, but time after noon and before midnight is 12 plus the time.



On a 24-hour clock, 7:30 P.M. is: 12:00 + 7:30 = 19:30.

Example 3 Amtrak, the national train company, has a train that leaves Rochester, New York, at 11:47 A.M. and arrives in New York City at 6:40 P.M. If the train is running on schedule, what is the total travel time from Rochester to New York City?

ROCHESTER, NY TO NEW YORK CITY		
MONDAY TO FRIDAY, EXCEPT HOLIDAYS		
Leaves	Rochester, NY	11:47 A.M.
Arrives	New York City, NY	6:40 P.M.

Solution First find the arrival time on a 24-hour clock.

6:40 P.M. = 12:00 + 6:40 = 18:40

Subtract the departure time from the arrival time:

$$\begin{array}{r} 18{:}40 \\ -11{:}47 \\ \hline \end{array}$$

To subtract 47 from 40, borrow 1 of the 18 hours and change it to 60 minutes. Then add the 60 minutes to 40 minutes.

$$\begin{array}{lr} \text{Arrival time} = 18 \text{ hr } 40 \text{ min} = & 17 \text{ hr } 100 \text{ min} \\ \text{Departure time} = & -11 \text{ hr } 47 \text{ min} \\ \text{Total travel time} = & 6 \text{ hr } 53 \text{ min} \end{array}$$

There is another way to solve the last problem. Find the travel time before noon and the travel time after noon. Then add the results. The departure time is 11:47 A.M. or 13 minutes before noon. The arrival time is 6:40 P.M. or 6 hours and 40 minutes after noon. The total travel time is:

6 hours 40 minutes + 13 minutes = 6 hours 53 minutes

To solve the problems in the next exercise, review:

- dividing fractions, page 235
- multiplying decimals, page 231
- subtracting measurements, page 239

Exercise 6

Part A

Use a calculator to solve any of these problems, and use the following information to answer problems 1 to 3.

SITUATION

A taxi ride in Philadelphia costs \$1.80 from the time the meter is turned on for the first $\frac{1}{6}$ mile and \$0.30 per $\frac{1}{6}$ mile thereafter. The waiting time rate is \$0.20 per minute.

1. What is the basic cost of a $1\frac{1}{2}$-mile taxi ride in Philadelphia?
2. What is the cost of a $2\frac{3}{4}$-mile taxi ride that includes six minutes of stopping time for heavy traffic and a 15% tip?
3. Find the cost, including a 15% tip, of a taxi ride that is only $\frac{1}{2}$ mile long, but includes a three-minute delay for street construction.

Part B

Use the following information for problems 4 and 5.

SITUATION

In Chicago, the fare for a taxi ride starts at \$1.90. The cost is then \$1.60 per mile plus a \$2.00 charge for every 6 minutes of waiting time. There is a \$0.50 charge for each additional passenger over 12 and under 65.

4. Find the basic cost for a $2\frac{1}{2}$-mile taxi ride in Chicago for two people if there is no waiting time.
5. Find the cost including a 15% tip for a $6\frac{1}{4}$-mile taxi ride for a single passenger in Chicago if the ride is stopped for a total of 12 minutes because of a traffic accident.

Part C

The table below and the table on the next page show the weekday timetable and fares for trains from White Plains to New York City. *E* is for express trains, and *L* is for local trains. *X* means that the train does not stop at 125th Street, and *OW* means one-way. *Peak* refers to trains that leave White Plains from 5:03 A.M. until 9:03 A.M. Use the tables to answer problems 6 to 11.

WHITE PLAINS TO NEW YORK					
MONDAY TO FRIDAY, EXCEPT HOLIDAYS					
LEAVE White Plains	ARRIVE New York	LEAVE White Plains	ARRIVE New York	LEAVE White Plains	ARRIVE New York
AM	AM	AM	AM	PM	PM
12:06 L	12:55	X 9:00 E	9:33	4:06 L	4:59
5:03 L	5:48	9:03 E	9:42	4:25 E	5:04
5:31 E	6:02	9:26 E	10:03	4:31 L	5:21
5:35 L	6:20	9:29 L	10:18	4:58 E	5:35
5:59 E	6:30	9:54 E	10:33	5:03 L	5:56
6:04 L	6:49	9:58 E	10:36	5:32 E	6:10
6:19 L	7:03	10:08 L	11:01	5:38 L	6:29
6:30 E	7:05	10:30	11:14	5:58 E	6:36
6:35 E	7:09	10:58 E	11:34	6:08 L	7:00
6:40 E	7:13	11:08 L	11:59	6:36	7:21
6:43	7:26	11:30	12:14	6:51 E	7:27
6:51 E	7:29	11:58 E	12:34	7:06 L	7:55
7:00 E	7:33	12:08 L	1:01	7:58 E	8:32
7:08	7:50	12:30	1:14	8:06 L	8:57
X 7:18 E	7:52	12:58 E	1:35	8:58 E	9:32
7:22	7:56	1:08 L	1:59	9:06 L	9:55
7:37 E	8:14	1:30	2:14	9:58 E	10:32
7:40 E	8:18	1:58 E	2:34	10:06 L	10:57
X 8:01 E	8:38	2:08 L	3:01	10:58 E	11:32
8:05 E	8:42	2:30 L	3:22	11:06 L	11:55
8:13 E	8:51	2:58 E	3:34	12:06 L	12:55
8:28 E	9:05	3:08 L	3:59	--:--	--:--
8:31 E	9:07	3:33 L	4:23	--:--	--:--
X 8:40 E	9:19	3:58 E	4:34	--:--	--:--
AM	AM	PM	PM	AM	AM

SAMPLE FARES TO GRAND CENTRAL TERMINAL & HARLEM–125TH STREET

Ticket Type:	Web Ticket	Station	On Board Train
OW Peak:	$7.60	$8.00	$11.00
10 Trip Peak:	$76.00	$80.00	N/A
OW Off-Peak:	$5.70	$6.00	$9.00
10 Trip Off-Peak:	$48.45	$51.00	N/A
Monthly:	$171.50	$175.00	N/A
Weekly:	$53.20	$56.00	N/A

6. Find the time in minutes for each of the following train trips from White Plains to New York:

   a. the local train that leaves White Plains at 6:19 A.M.

   b. the express train that leaves White Plains at 8:40 A.M.

   c. the local train that leaves White Plains at 5:38 P.M.

   d. the express train that leaves White Plains at 8:58 P.M.

7. What is the cost per ride of a 10-trip peak ticket that is bought on the Web?

8. What is the cost per ride of a 10-trip peak ticket that is bought at the station?

9. Find the cost per ride of a 10-trip off-peak ticket that is purchased on the Web.

10. Find the cost per ride of a 10-trip off-peak ticket that is purchased at the station.

11. In one month with no holidays, Rosa calculated that she will make 22 round-trip rides between White Plains and New York or a total of 44 rides. To the nearest cent, what will be the cost per ride if she buys a monthly pass for the trips between White Plains and New York on the Web?