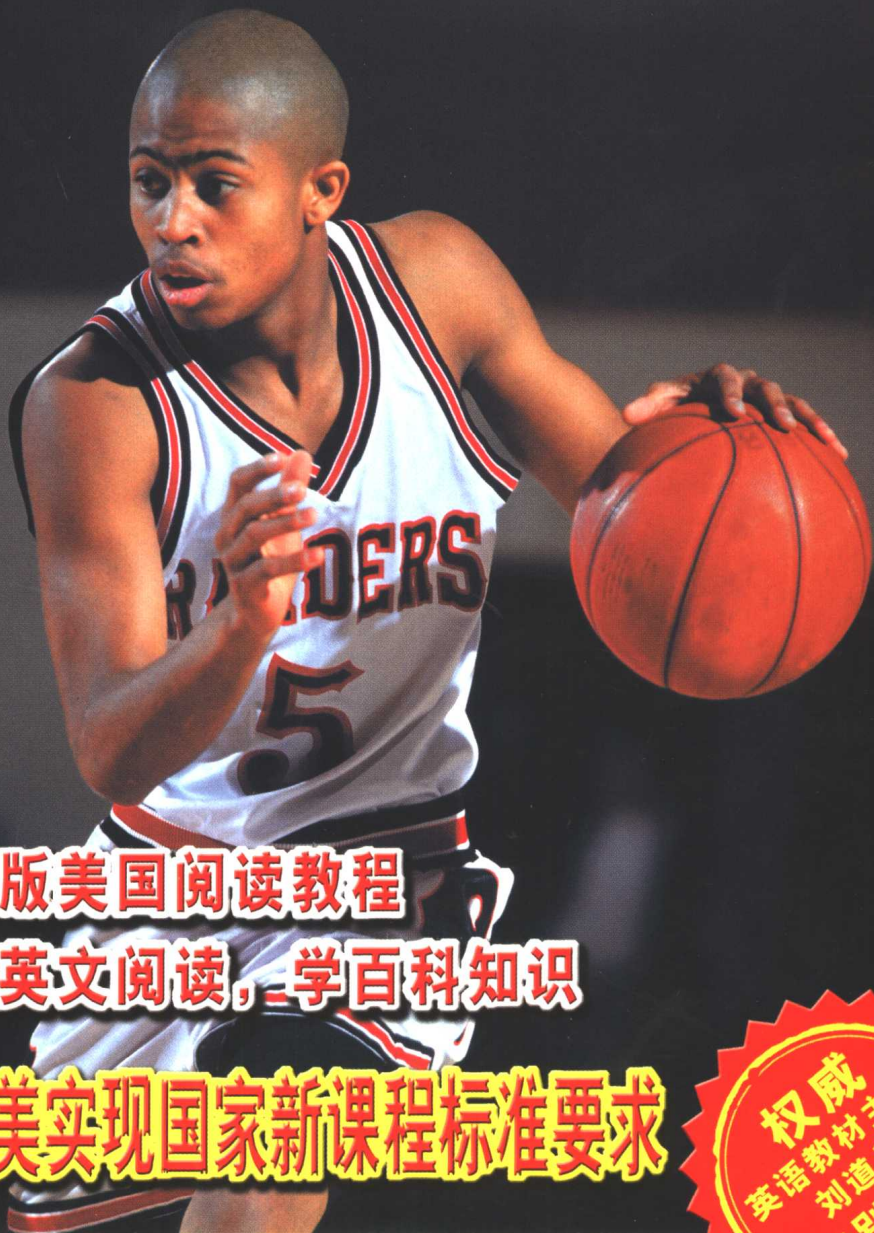


标准英语分级读物·学生卷·第2级

体育运动中的数学 SPORTS MATH



原版美国阅读教程
用英文阅读，学百科知识

完美实现国家新课程标准要求

童趣出版有限公司编译 人民邮电出版社出版

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体育运动中的数学

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最佳学习安排

训练正确阅读习惯，提高理解分析能力

- 第一步，正式的学习开始之前，请先认真阅读封面封底，以了解本书的特点。
- 第二步，在开始阅读某一本书时，首先阅读目录页，然后粗略翻阅全书各页，看一看照片的图表。根据以上粗读所获信息判断出本书的基本内容和主题。
- 第三步，想一想你已经掌握了多少关于本书主题的知识。
- 第四步，开始阅读。阅读的重点放在与主题相关的新知识上。哪些是你通过阅读本书获得的新知识，用简洁的方式做上标记。
- 第五步，边读边标出你有切身体会的地方，你喜欢或支持的观点或做法。
- 第六步，遇到当页注释中没有的生词，要尽量根据上下文猜出它的意思，而不要马上查词典，以免打断阅读。将这些生词标出来，读后查词典印证你的猜测。
- 第七步，读完后，总结文章主要讲的是什么，并在文中找出具体内容支持你的判断。

掌握地道英文写作，学习纯正英语表达

- 第八步，完成阅读后，分析本书文章的写作方法，写出本书提要。
- 第九步，与同学们就本书主题展开讨论，并提出自己的观点和结论。

重要提示

利用词汇注释巩固和扩充词汇量

为扩充学生词汇量，超出高中课本范围的词汇在读本各页中做了注释，并汇总在书后词汇表中，以方便学习和记忆。

利用音标学习单词发音

为规范本读物的音标标注方法，并更充分地体现美式发音的特点，本读物采用标准的 Jones 国际音标和 K.K 音标，Jones 在前，K.K 在后，同时标注同一个单词。此两种音标为目前使用最多的音标系统，而 K.K 音标又能充分体现美式发音的特点。音标查证以商务印书馆的《牛津高阶英汉双解词典》（第四版）为准。

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SPORTS MATH

体育运动中的数学

BY ERIN SULLIVAN

王金玉 李毅 注

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Where's the Math in Sports?

You may be wondering what math has to do with sports. Think about shooting baskets, running in a race, or even doing tricks on a skateboard. Are you ever using math when you do these things?

The answer is yes! Have you ever kept track of the points you scored during a basketball game? Have you ever timed your running speed? Have you ever tried to do a “180” on your skateboard?

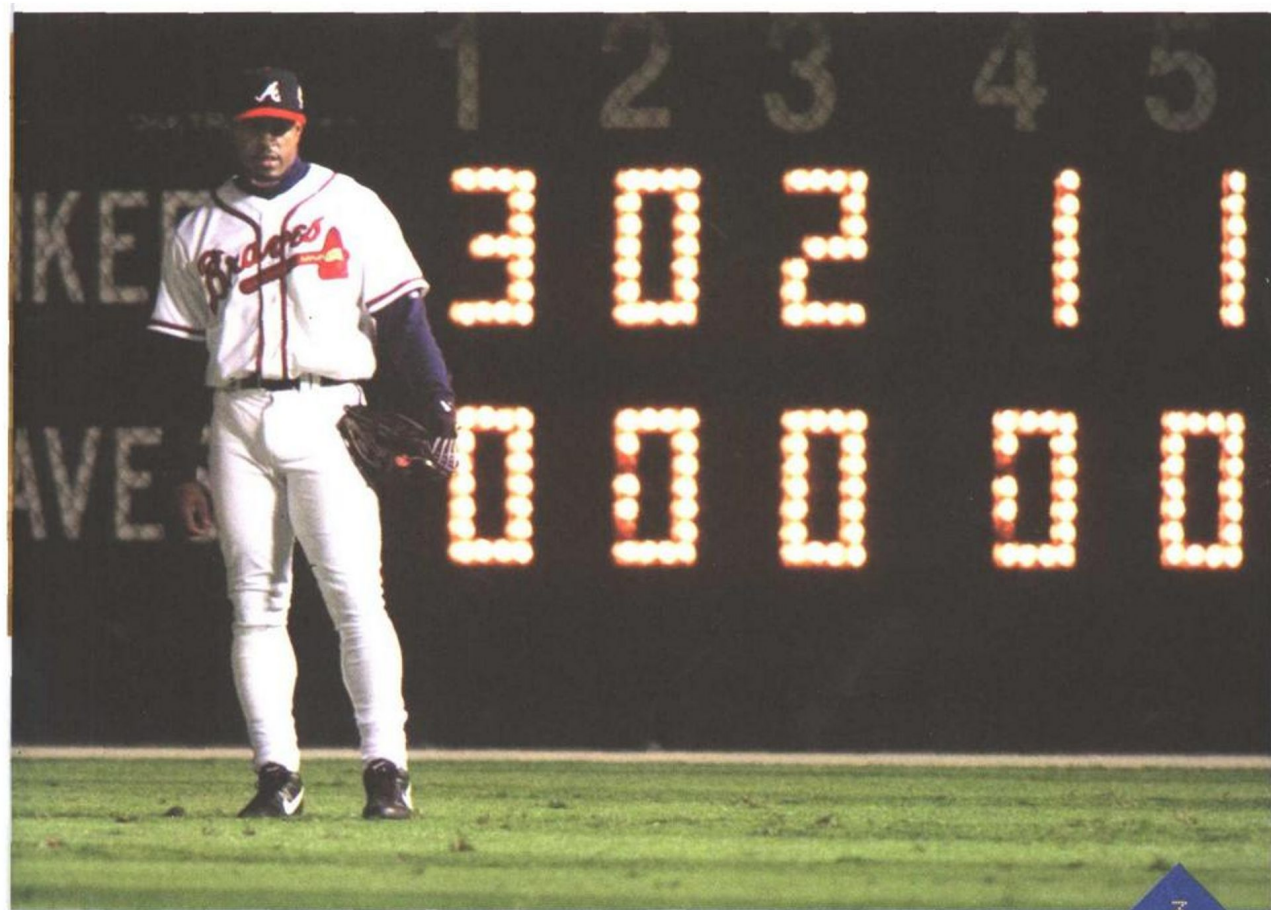


keep track of 记录

skateboard ['skeɪtbɔ:d, 'sketbɔ:d] n. 滑板

Even when you're just sitting in the stands at a sports event, you're using math—probably without even thinking about it. You need to use math to keep track of your team's wins and losses. You need to

use math to see how much time is left in a game. You even need to use math to see if you have enough money to buy a hot dog! Whether you're an athlete or a fan, math comes in handy.



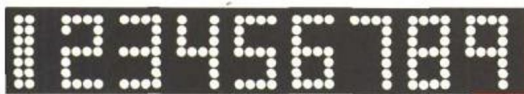
Team Sports



Nolan Ryan
was a great pitcher.

People love to play and watch team sports. One of the most popular team sports is baseball.

Some baseball fans are really into numbers. They can tell you how many times a player has struck out, how many games a team has won, and even how many home runs have been hit in a particular baseball park. More than anything else, though, baseball fans seem to enjoy arguing over who the greatest baseball player of all time was. A strong batter? A fast runner? A good fielder? An awesome pitcher? What do you think?



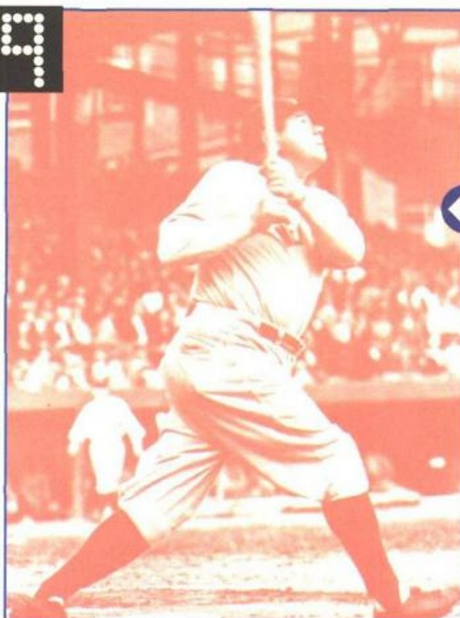
awesome ['ɔ:səm, 'əsəm] a. 令人感到畏惧的

batter ['bætə(r), 'bætə] n. (棒球) 击球员

fielder ['fi:ldə(r), 'fildə] n. (棒球) 守场员, 外场手

hitter ['hitə(r), 'hitə] n. (棒球) 击球员

home runs (棒球) 本垒打



pitcher ['pitʃə(r),
'pitʃə] n. 投手
runner ['rʌnə(r),
'rʌnə] n. (棒球)
跑垒者

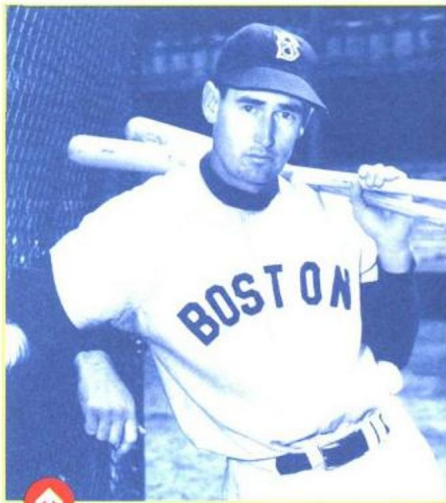


Many people think that Babe Ruth was baseball's greatest hitter. His lifetime batting average was .342.

One way to pick a baseball great is to look at the player's batting average. A batting average tells how often a player gets a hit compared to how often he bats.

Hitting a ball in the major leagues is harder than you might think. Baseball great Ted Williams once said that the best players hit the ball only three out of every ten times at bat!

at bat 上场击球，出场击球次数
batting average (棒球) 击球率
great n. 高手，名家



Ted Williams was a great batter.



Solve This



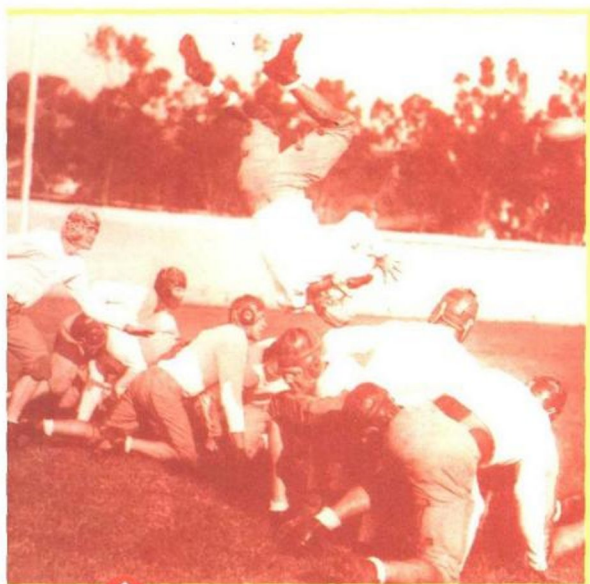
PROBLEM 1

Here's how you can find a player's batting average:

number of hits ÷ number of times at bat = batting average

Using a calculator, find the following players' batting averages. Round to the nearest thousandth.

| PLAYER | HITS | AT BATS | BATTING AVERAGE |
|--------|------|---------|-----------------|
| Jim | 16 | 64 | |
| Stacey | 21 | 76 | |
| José | 14 | 55 | |
| Lena | 19 | 60 | |



This photo from 1935 shows football players practicing.

Football is one of the great American sports. Some people think that football began back in the 1860s, when college students played a new version of rugby. Both football and rugby are games in which players have to get the ball into the goal by running with it, throwing it, and kicking it.

rugby ['rʌɡbi, 'rʌɡbi] n. 橄榄球
version ['vɜːʃn, 'vɜːʒən] n. 形式



This stadium at the University of Wisconsin holds about 80,000 people!

Ever since the first football game was played, fans have been coming out to watch their teams compete. While high school fields might have room for only 100 fans, college and professional football teams have room for thousands of people.

Most teams keep track of attendance at each game. Attendance is the number of fans who come to watch the game. Does each team send out a person to count all of the people in their seats? Probably not. Instead, officials keep track of how many tickets are sold.

attendance [ə'tendəns, ə'tendəns] n. 到场, 出席
round [raʊnd, raʊnd] v. 把……四舍五入, 使凑整



Solve This

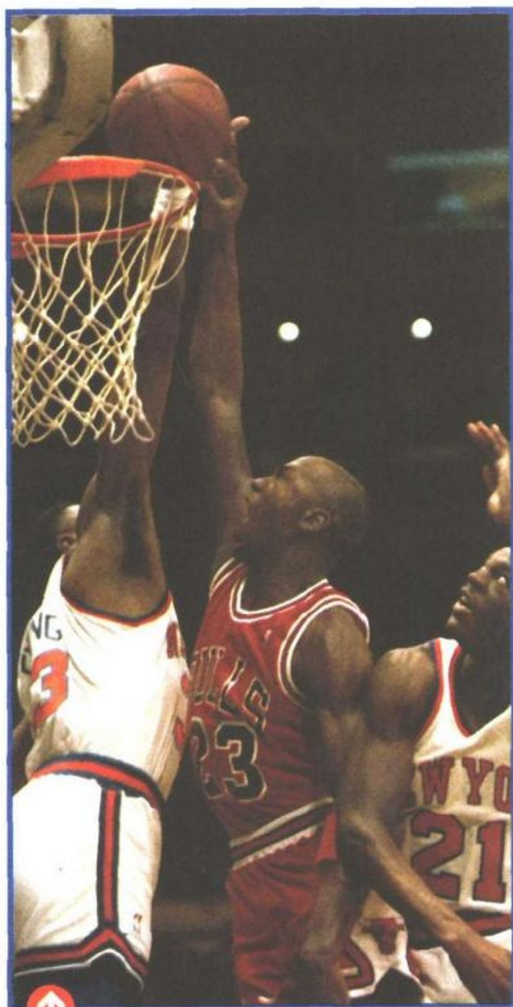


PROBLEM 2

This chart shows the attendance at five of the Baltimore Ravens' home games.

Round each attendance number to the nearest hundred.

| GAME | ATTENDANCE | ROUNDED TO THE NEAREST HUNDRED |
|------|------------|--------------------------------|
| 1 | 68,843 | |
| 2 | 68,481 | |
| 3 | 69,200 | |
| 4 | 69,405 | |
| 5 | 69,416 | |



**Michael Jordan scores
a 2-pointer.**

It is said that basketball was invented in Massachusetts on a cold winter day back in 1891. A teacher named James Naismith wanted to invent a team sport that his students could play inside. He got a soccer ball and hung two peach baskets at either end of the gym. During that very first game, Naismith needed a ladder to get the ball out of the basket every time a team scored!

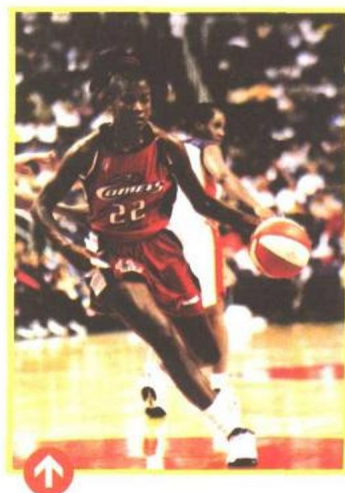
Since then, basketball has become a favorite sport. And in 1997, the world of basketball took a big step forward when the Women's National Basketball Association (WNBA) was started.

Women's and men's basketball games follow most of the same rules. Each team has five players on the court. They dribble and pass the ball down the court to shoot baskets. Different kinds of baskets earn different points.

Depending on where the player is standing when making the shot, a shot can be worth one point, two points, or three points.

dribble ['drɪbl, 'drɪb] v. 运 (球)

parenthesis [pə'renθəsis, pə'renθəsis] n. 括号



Sheryl Swoopes was the first woman signed to the WNBA in 1997.



Solve This



PROBLEM 3

Let's say you shoot two 3-pointers, four 2-pointers, and two 1-pointers in one game.

Your math problem would look like this:

$$(2 \times 3) + (4 \times 2) + (2 \times 1) = 16 \text{ points}$$

Use the information in this chart to find out how many points each player scored.

Remember to multiply inside the parentheses first and then add!

| PLAYER | 1 POINT | 2 POINTS | 3 POINTS | TOTAL |
|--------|---------|----------|----------|-------|
| Leah | 4 | 3 | 2 | |
| Morgan | 3 | 1 | 1 | |
| Dawn | 5 | 3 | 1 | |
| Lisa | 2 | 0 | 5 | |

Individual Achievement

Over 2,500 years ago, the Greeks fought a long and difficult battle against their enemies, the Persians. When the Greeks finally won, they sent a runner from the site of their victory at Marathon to Athens, a distance of about twenty-six miles, to announce the good news.

Today, people compete in marathons, which are running races named in honor of this amazing trip. The first official marathon was run at the very first modern Olympics in 1896. In addition to the Olympic marathon, cities all over the world hold marathons every year.

marathon ['mærəθən, 'mærə,θən] n. 马拉松赛跑



Like the original marathon, the modern day marathon is about 26 miles long: 26 miles and 385 yards, to be exact! Record-setting runners often finish the race in a little over two hours. That's equal to running each mile in about five minutes!



Most marathons today have a category for wheelchair racers.



The Boston Marathon is held every year in April.


category ['kætəgəri, 'kætəgəri] n. 种类





Solve This

PROBLEM 4

A marathon is 26 miles, 385 yards. Remember that there are 3 feet in a yard and 5,280 feet in a mile.

 How many feet are in a marathon?

 How many yards are in a marathon?

 How many inches are in a marathon?



$+$
 $-$
 \times
 \div

Solve This

PROBLEM 6

Some Olympic pools are 50 meters long.

How many lengths of the pool would you need to swim in each of these events?

50 meters

100 meters

200 meters

400 meters

800 meters

At the Summer Olympics, there are 32 different swimming events, 16 for men and 16 for women. Some races are 50 meters long, while others are 1,500 meters.

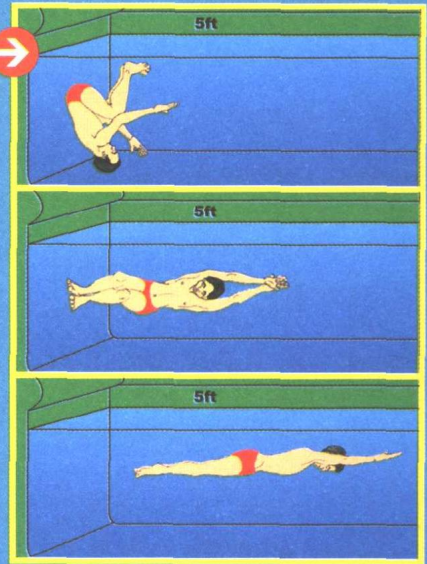
A swimmer in a short race will have to swim hard and fast from the beginning, while a swimmer in a longer race will try to save some energy for the end.



This swimmer is doing the butterfly stroke.

butterfly stroke 蝶泳

This diagram shows from top to bottom three steps of a flip turn.



In every swimming race, the swimmer's goal is to finish in the fastest time. Many swimmers focus on making their starts and their turns as quickly as possible. Often, a swimmer who has a slow start or makes a slow turn has a hard time catching up with the leader.

flip [flip,flip] n.空翻



Solve This



PROBLEM 6

Here's how you calculate a swimmer's speed:
distance traveled \div time passed = speed. Let's say you swam 50 meters (m) in 25 seconds (sec). Your math problem would look like this: $50 \text{ m} \div 25 \text{ sec} = 2 \text{ m/sec}$.

This tells you that you swam 2 meters per second!

Use a calculator to find out how fast these athletes swam.

Round each answer to the nearest hundredth.

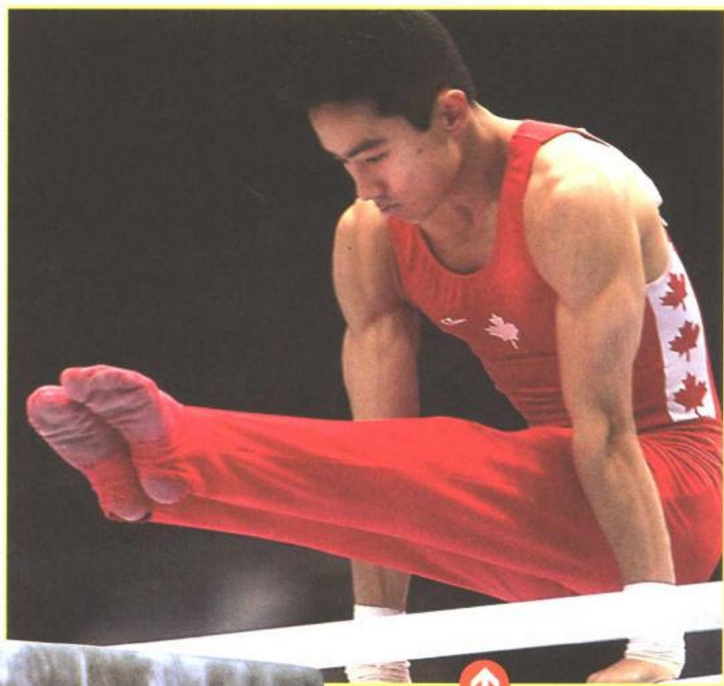
Remember to turn minutes into seconds!

| SWIMMER | DISTANCE | TIME | SPEED (m/sec) |
|---------|------------|---------------|---------------|
| Diana | 100 meters | 1 min, 10 sec | |
| Lee | 200 meters | 2 min, 6 sec | |
| Joanna | 400 meters | 4 min, 18 sec | |



Gymnastics is one of the most popular Olympic sports. There are many different kinds of events for gymnasts to compete in, such as balance beams, parallel bars, and rings. For some fans, a favorite event is the floor exercise, where gymnasts do jumps, tumblers, and handsprings to music.

balance beam 平衡木 floor exercise 自由体操
 gymnast ['dʒɪmnæst, 'dʒɪmnæst] n. 体操运动员
 gymnastics [dʒɪm'næstiks, dʒɪm'næstiks] n. 体操
 handspring ['hændsprɪŋ] n. 手翻, 前手翻腾跃



parallel bars

parallel ['pærəlel, 'pærə,lel] a. 平行的

parallel bars 双杠

rings 吊环 (比赛)

tumble ['tʌmbəl, 'tʌmbəl] n. 翻滚