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3级

美国原版青少年核心能力拓展

好玩的数学

Targeted Mathematics Student Guided Practice Book

主 编：〔美〕莎拉·约翰逊

天津出版传媒集团
天津科技翻译出版有限公司

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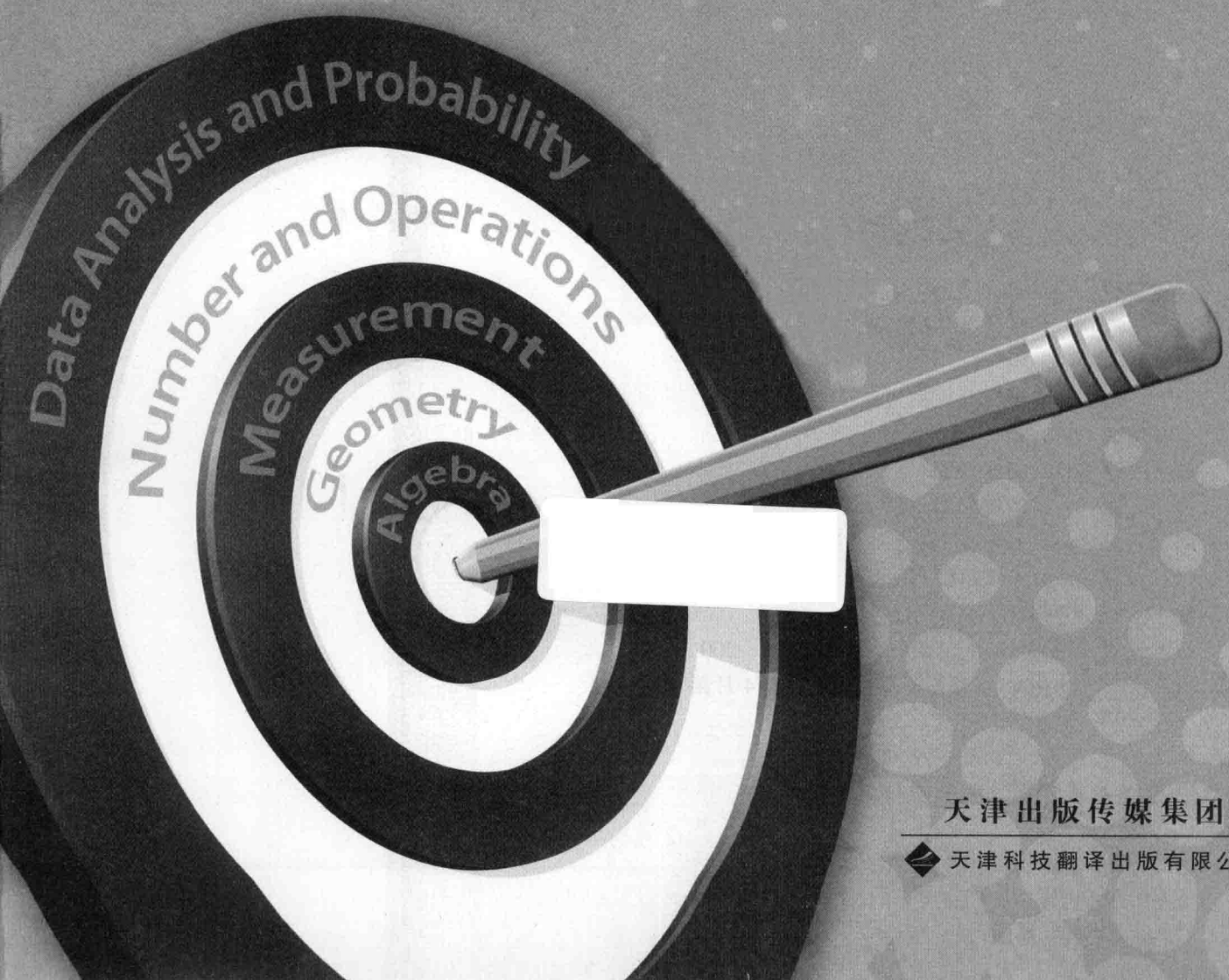

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编者前言

《美国原版青少年核心能力拓展:好玩的数学》(学前阶段及1~8级)是从美国教师创新教材出版公司(Teacher Created Materials Inc.)引进的现行介入式数学指南,全面反映了美国学前班至八年级数学课的现行教学内容及教学要求,同时也为我们展示了美国青少年丰富多彩、生动活泼的学习场景。

阅读使用这套丛书会让你有一种犹如在美国上学、与美国的小朋友同步学习的亲身体验。从中不仅可以了解美国学生在数学课上学些什么,做些什么样的作业,考些什么样的数学题;还可以知道他们的老师在课堂上讲些什么,以及对学生的要求是什么。由此你会发现,他们的数学课与我们的有相同之处,但也并非完全相同。我们侧重于背公式,做习题,备考应试;而他们侧重于理解和掌握数学的基础知识,既讲述初等数学的内容,又介绍了一些高等数学、数论、概率论、统计学的知识,并与其他学科相互联系,从而了解数学在其他学科中的应用,而且在教学中注意联系实际,注重实践应用,因此上数学课不会让学生感到枯燥乏味,而是感觉生动有趣。二者有着不同的教学理念和方式,如果能通过这套丛书的学习将二者有机地结合起来,取长补短,优势互补,必能开阔你的眼界,提高你对数学概念的理解,提升你的应用能力(当然也包括应试能力)。

数学是世界各地通用的一门学科,有着共同的概念、公式、术语、习题、计算方法,因此在这套书中有着非常熟悉的学习内容和知识背景:学过的数学知识,做过的数学习题,考过的数学试题。特别之处在于这套丛书以英文原版形式体现,这就为你营造了一个在熟悉的背景下学习英语的环境,学会用地道的英语来表达学过的知识,表达真实的日常生活和学习活动,学会用英语和同学进行学习互动,从而大幅度提高你的英语水平。既学了数学又学了英语(而且是非常实用的英语),岂非两全其美的好事。

这套丛书适用于我国广大青少年读者,尤其是双语学校的学生以及打算到英语国家上高中、上大学的学生。学习这套丛书,就等于在国内体验了国外的学校生活,这对今后的深造无疑是大有裨益的。

打开书本,开启你在国内"留学"的全新生活吧!

英语就得天天练——阅读美国孩子的课余英文原版书

好玩的数学——体验美国青少年数学学习的乐趣

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Student Welcome Letter
欢 迎 信

Dear Student,

You are starting a math program that will help you review third grade. Up to this point in school, you have learned many mathematical skills. This program will help you focus on what you already know how to do in math and what you need to learn. You will learn the important mathematical concepts, skills, and vocabulary so that you are ready for fourth grade.

Sometimes students have trouble learning math. It can seem confusing. This program will help you practice math every day. You will review many things you learned in third grade. Some of those things include multiplication, fractions, and problem solving.

Please sign the bottom of this letter and keep it as a reminder of the skills you learned in this mathematics program. Have fun!

_____

Student Signature（学生签名）

Diagnostic Test
摸底测试

1 Which number means five thousands (千), no hundreds (百), three tens, and two ones?

Ⓐ 5,320

Ⓑ 5,032

Ⓒ 50,302

Ⓓ 5,203

2 Which group shows the numbers in order from least to greatest?

Ⓕ 7,046 7,024 7,035 7,082

Ⓖ 7,035 7,046 7,082 7,024

Ⓗ 7,082 7,035 7,046 7,024

Ⓙ 7,024 7,035 7,046 7,082

3 25 + 53 can also be written as

Ⓐ (25 + 53) + (25 + 53)

Ⓑ (5 + 5) + (2 + 3)

Ⓒ (20 + 50) + (5 + 3)

Ⓓ (50 + 2) + (30 + 5)

4 Which shows one way to check (检查) the answer?

188 + 51 = 239

Ⓕ 188 – 51

Ⓖ 188 + 239

Ⓗ 51 + 239

Ⓙ 239 – 188

5 Round (取整) 384 to the nearest 10.

Ⓐ 380

Ⓑ 390

Ⓒ 374

Ⓓ 274

6 Brian wants to buy favors (聚会的礼品) to give at his party. Each favor costs 10 cents (美分). Brian has 87 cents. What is the greatest number of favors he can buy?

Ⓕ 9

Ⓖ 8

Ⓗ 7

Ⓙ 6

Diagnostic Test *(cont.)*

7 Which number pair has a product (乘积) of 12?

Ⓐ 3, 4

Ⓑ 9, 3

Ⓒ 24, 2

Ⓓ 17, 5

8 Four friends want to buy a video game (电子游戏). They each chip in (出钱, 集资) 8 dollars. Which of the following could be used to find out how much money the friends have all together?

Ⓕ 4 + 8

Ⓖ 8 ÷ 4

Ⓗ 8 – 4

Ⓙ 4 x 8

9 Five brothers and sisters are sharing (共享, 收入分成) $24.00. Each is to receive an equal (相等的) amount. If any money is left over, it will go into a home bank. Which statement (叙述) about the money is true?

Ⓐ $34.00 will go into the home bank.

Ⓑ Each child will receive $4.80.

Ⓒ Each child will receive $13.00 and $9.00 will go into the home bank.

Ⓓ $26.00 will go into the home bank.

10 Omar picked (采摘) 18 oranges from the tree in his backyard (后院, 庭院). He wants to keep half and give half to his grandma. How many oranges would each of them get?

Ⓕ 7

Ⓖ 36

Ⓗ 20

Ⓙ 9

11 Look at the shaded part (阴影区域) of each figure (图). Which figure is $\frac{2}{3}$ shaded?

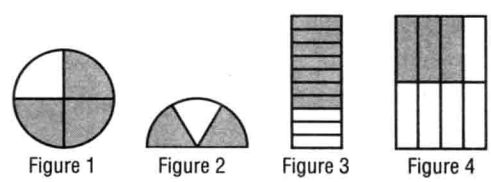


Figure 1 Figure 2 Figure 3 Figure 4

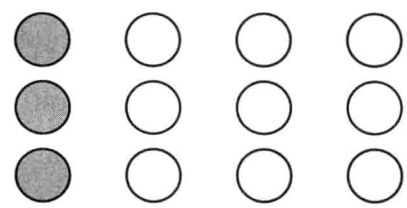
Ⓐ Figure 1

Ⓑ Figure 2

Ⓒ Figure 3

Ⓓ Figure 4

12 Which fraction (分数) stands for (代表) the number of shaded circles (图形)?



Ⓕ $\frac{1}{3}$ Ⓗ $\frac{1}{2}$

Ⓖ $\frac{1}{4}$ Ⓙ $\frac{3}{4}$

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Diagnostic Test *(cont.)*

13 Samantha ate $\frac{2}{8}$ of an apple. What fraction is equivalent to (相当于, 等于) $\frac{2}{8}$?

Ⓐ $\frac{1}{2}$

Ⓑ $\frac{1}{5}$

Ⓒ $\frac{1}{4}$

Ⓓ $\frac{1}{3}$

14 Which fraction is less than (大于) $\frac{1}{2}$?

Ⓕ $\frac{4}{5}$

Ⓖ $\frac{3}{4}$

Ⓗ $\frac{2}{3}$

Ⓙ $\frac{1}{3}$

15 What pattern (规律) was used to make this number group?

50, 59, 68, 77

Ⓐ Count by 5's.

Ⓑ Subtract (减去) 9.

Ⓒ Multiply by (乘以) 2.

Ⓓ Add 10 and subtract 1.

16 A foot (英尺) is a measure of _____.

Ⓕ temperature (温度)

Ⓖ time

Ⓗ length

Ⓙ volume (容量)

17 Which is an example of perimeter (周长)?

Ⓐ the distance around a playground

Ⓑ the depth of a lake

Ⓒ the height of a building

Ⓓ the length of a straight line (直线) across a field

18 What unit would be best to state the measurement (计量) of a small carton (盒) of milk?

Ⓕ kilogram (千克)

Ⓖ pint (品脱)

Ⓗ inches (英寸)

Ⓙ gram (克)

Diagnostic Test *(cont.)*

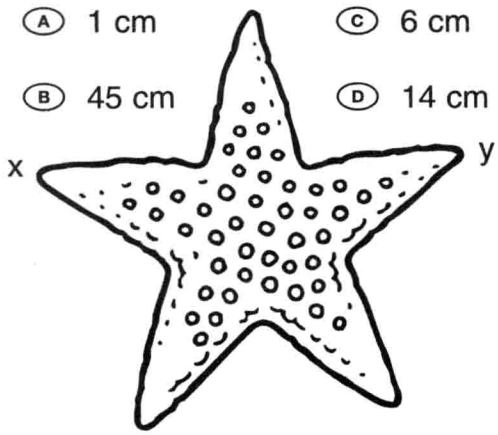
19 About how many centimeters (厘米) wide is the starfish (海星) from x to y?

Ⓐ 1 cm

Ⓑ 45 cm

Ⓒ 6 cm

Ⓓ 14 cm



20 Your soccer game (足球赛) began at 4:00 P.M. and ended at 7:00 P.M. How long was the game?

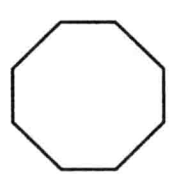
Ⓕ 3 hours long

Ⓖ 1 hour and 30 minutes long

Ⓗ 10 hours long

Ⓙ 2 hours and 30 minutes long

21 How many sides (边) and corners (角) does this shape (形状, 图形) have?



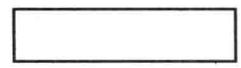
Ⓐ 8 sides and 8 corners

Ⓑ 6 sides and 8 corners

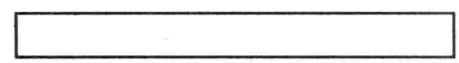
Ⓒ 8 sides and 10 corners

Ⓓ 4 sides and 4 corners

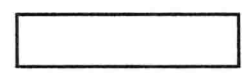
22 Which shape is congruent (一致的) to the rectangle (长方形) below?



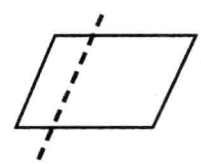
Ⓕ

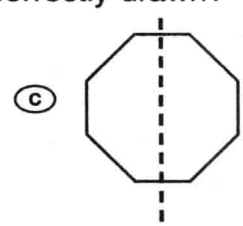
Ⓖ 

Ⓗ

Ⓙ 

23 Which figure shows a line of symmetry (对称) correctly drawn?

Ⓐ 

Ⓒ 

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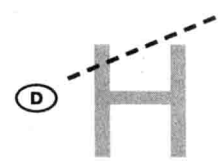
Ⓓ 

24 Look at the pattern (图案, 模式). Which shape belongs on the line?

Ⓕ

Ⓗ

Ⓖ

Ⓙ

Diagnostic Test *(cont.)*

25 The shape of a pyramid (金字塔) could be used to create a _____?

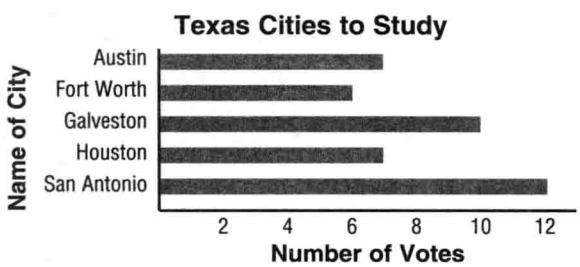
Ⓐ television (电视)

Ⓑ cereal box (麦片盒)

Ⓒ garbage can (垃圾箱)

Ⓓ roof (屋顶)

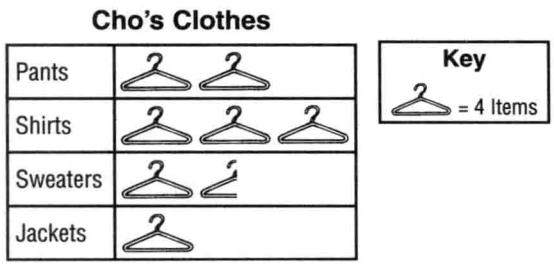
26 Which city received two votes (选票) less than San Antonio?



Ⓕ Galveston Ⓗ Fort Worth

Ⓖ Austin Ⓙ Houston

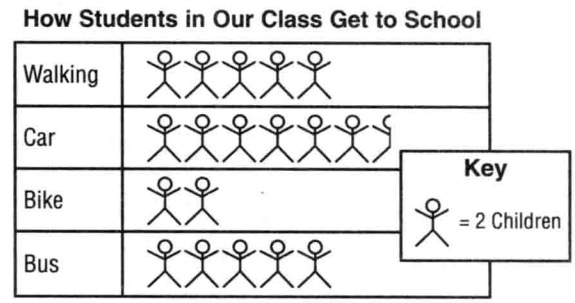
27 How many more shirts (衬衫) than sweaters (毛衣) does Cho have?



Ⓐ 12 Ⓒ 6

Ⓑ 10 Ⓓ 2

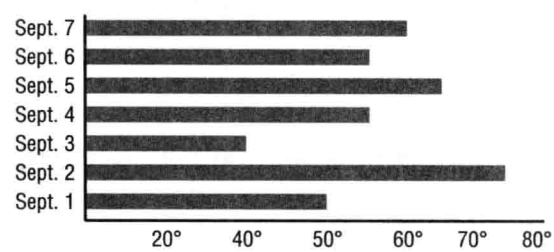
28 What is the total number (总数) of students in the class?



Ⓕ 37 Ⓗ 19

Ⓖ 18 Ⓙ 38

29 What is the best title (最恰当的标题) for the bar graph (条形图)?



Ⓐ The Number of Days in September
Ⓑ Cool Days During September
Ⓒ How Many Weeks in September
Ⓓ Temperatures During the First Week of September

30 What is the probability (概率) that there are 31 days in August?

Ⓕ likely

Ⓖ impossible

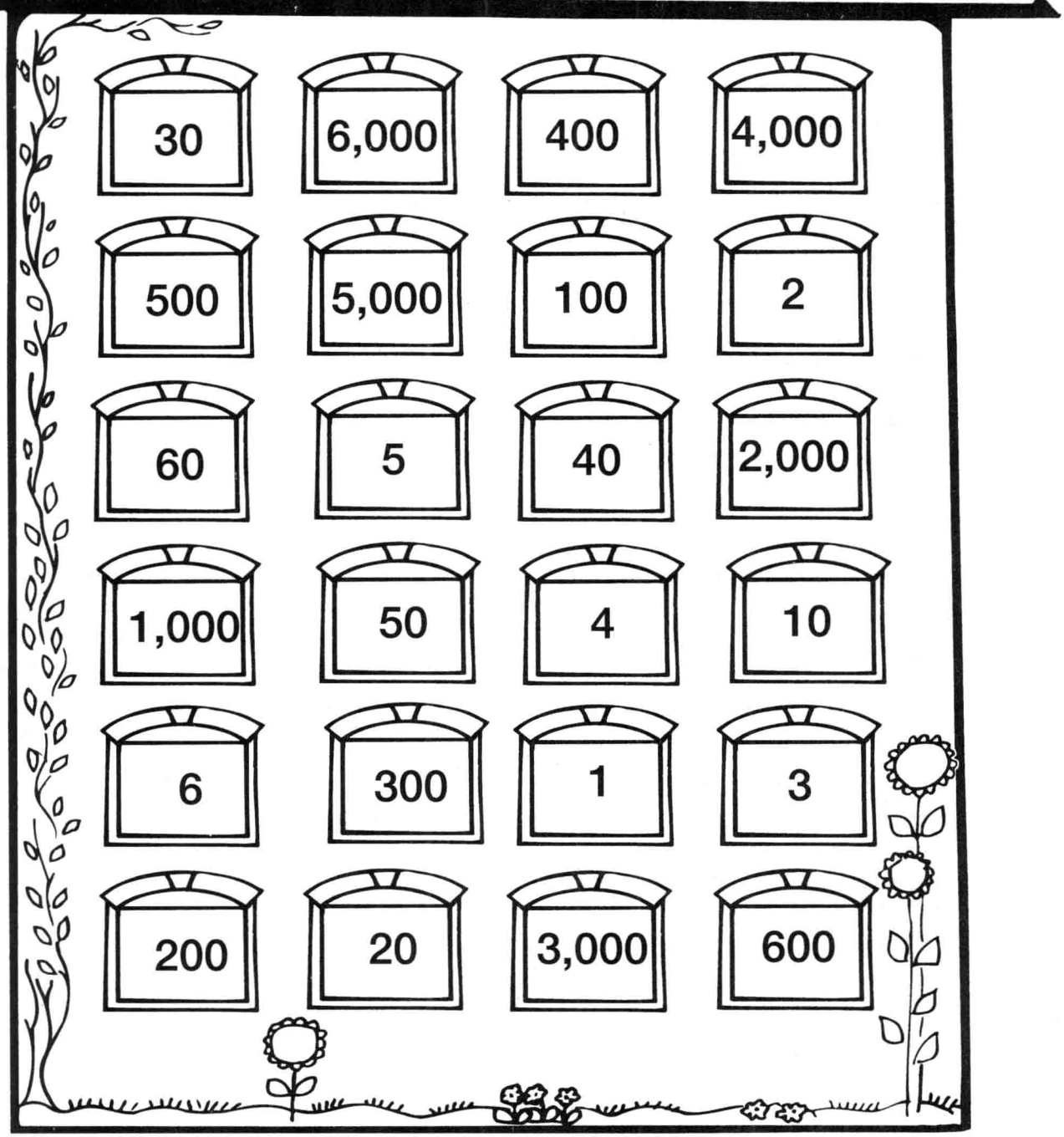
Ⓗ unlikely

Ⓙ certain

Windows

数字窗

Directions: Play this game with a partner（同伴）. You will need number cards and some counters（计数器） in two different colors (one color for each player). Choose four number cards and then arrange（组合） them to make the highest four-digit number（最大的四位数） possible. Say this number aloud. Choose the value of any one digit（任意一位数代表的数值） from this number and cover the corresponding（对应的） window below. For example, if your number is 4,321, you can choose to cover 1, 20, 300, or 4,000. The winner is the first person to cover four windows in a row.



Creating a Table 1

制作表格 1

When a problem has a lot of information (信息), placing the information in a table helps you organize the information so that it can be easily understood. Using a table can help you keep track of (记录) the information and reduce the chance of making mistakes (减少出错的机会). A table makes it easy to see what information is given and what information is missing.

When a table is created, the information often shows a pattern (规律), which can help you solve the problem.

Planning Your Table (规划表格)

- First, read the problem and decide what information is given and what information you need to find out.
- Next, be sure you understand what the table is going to tell you. Include headings (表头) to label the information that you are organizing (标志出你汇总的信息).

Problem: What's My Age?

The Problem (问题)

Mrs. Stone is 35 years old. Her son, Ty, is 7 years old. How old will Ty be when his mom is 39?

Understanding the Problem (理解问题)

- *What do we know?*
  Mrs. Stone is 35 now.
  Ty is 7 now.
  They will both get one year older every year.
- *What do we need to find out?*
  How old will Ty be when Mrs. Stone is 39?

Planning and Communicating a Solution (规划和交流解决方案)

To solve (解决) this problem, create a table with two columns (列). Write the heading *Mrs. Stone* above one column and *Ty* above the other column. Write Mrs. Stone's age from 35 to 39 in her column (from top to bottom) (从上至下).

Then, write Ty's ages in the other column.

Hint (提示): Start with 7 because we already know that Ty is 7 when Mrs. Stone is 35.

Mrs. Stone	Ty
35	7
36	8
37	9
38	10
39	11

- *Do you see the answer?*
  When Mrs. Stone is 39 years old, Ty will be 11 years old.

Reflecting and Generalizing (反思与归纳)

The table makes it easy to see a pattern. If you see the pattern right away, you can find the answer easily. For this table, there is a subtraction (减法) pattern. Mrs. Stone's age minus (减去) Ty's age always equals (等于) 28 years.

Extension (扩展练习)

How old will Mrs. Stone be when Ty is 20 years old?

Standardized Test Preparation 1

标准考前测试 1

1 Which number means eight thousands, two hundreds, six tens, and five ones?

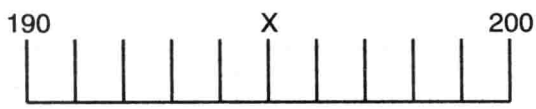
Ⓐ 8,265

Ⓑ 82,605

Ⓒ 8,605

Ⓓ 8,256

2 What is the correct number to replace（替换） the X on the number line?



Ⓕ 202

Ⓖ 200

Ⓗ 195

Ⓙ 199

3 179 + _____ = 200

Ⓐ 201

Ⓑ 121

Ⓒ 21

Ⓓ 11

4 Maria and Che are collecting stamps（集邮）. Che has 227 stamps. Maria has 33 fewer（更少的） stamps. How many stamps does Maria have?

Ⓕ 194

Ⓖ 184

Ⓗ 160

Ⓙ 97

5 Round（取整） 868 to the nearest 100.

Ⓐ 870

Ⓑ 800

Ⓒ 900

Ⓓ 1,068

6 Pick one question from this test. Explain（解释） how and why you chose your answer.

_____

_____

_____

_____

_____

_____

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