



New York State  
**EDUCATION DEPARTMENT**  
Knowledge > Skill > Opportunity

**New York State Testing Program  
Grade 4  
Mathematics Test**

**Released Questions**

**2022**

New York State administered the Mathematics Tests in May 2022 and is now making approximately 75% of the questions from these tests available for review and use.



# New York State Testing Program Grades 3–8 Mathematics

## Released Questions from 2022 Exams

### ***Background***

As in past years, SED is releasing large portions of the 2022 NYS Grades 3-8 English Language Arts and Mathematics test materials for review, discussion, and use.

For 2022, included in these released materials are at least 75 percent of the test questions that appeared on the 2022 tests (including all constructed-response questions) that counted toward students' scores. Additionally, SED is also providing a map that details what each released question measures and the correct response to each question. These released materials will help students, families, educators, and the public better understand the tests and the New York State Education Department's expectations for students.

### ***Understanding Math Questions***

#### **Multiple-Choice Questions**

Multiple-choice questions are designed to assess the New York State P-12 Learning Standards for Mathematics. Mathematics multiple-choice questions will be used mainly to assess standard algorithms and conceptual standards. Multiple-choice questions incorporate both the grade-level standards and the "Standards for Mathematical Practices." Many questions are framed within the context of real-world applications or require students to complete multiple steps. Likewise, many of these questions are linked to more than one standard, drawing on the simultaneous application of multiple skills and concepts.

#### **Short-Response Questions**

Short-response questions require students to complete tasks and show their work. Like multiple-choice questions, short-response questions will often require multiple steps, the application of multiple mathematics skills, and real-world applications. Many of the short-response questions will cover conceptual and application standards.

#### **Extended-Response Questions**

Extended-response questions ask students to show their work in completing two or more tasks or a more extensive problem. Extended-response questions allow students to show their understanding of mathematical procedures, conceptual understanding, and application. Extended-response questions may also assess student reasoning and the ability to critique the arguments of others. The scoring rubric for short and extended constructed-response questions can be found in the grade-level Educator Guides at <http://www.nysed.gov/state-assessment/grades-3-8-ela-and-math-test-manuals>.

## **New York State P-12 Learning Standards Alignment**

The alignment(s) to the New York State P-12 Learning Standards for Mathematics is/are intended to identify the primary analytic skills necessary to successfully answer each question. However, some questions measure proficiencies described in multiple standards, including a balanced combination of procedure and conceptual understanding. For example, two-point and three-point constructed-response questions require students to show an understanding of mathematical procedures, concepts, and applications.

### ***These Released Questions Do Not Comprise a “Mini Test”***

To ensure it is possible to develop future tests, some content must remain secure. This document is *not* intended to be representative of the entire test, to show how operational tests look, or to provide information about how teachers should administer the test; rather, its purpose is to provide an overview of how the test reflects the demands of the New York State P-12 Learning Standards.

The released questions do not represent the full spectrum of the standards assessed on the State tests, nor do they represent the full spectrum of how the standards should be taught and assessed in the classroom. It should not be assumed that a particular standard will be measured by an identical question in future assessments.

名称: \_\_\_\_\_



*Chinese (Simplified) Edition*

*Grade 4 2022*

*Mathematics Test*

*Session 1*

*April 26–28, 2022*

# 纽约州测试计划 数学测试 第1部分

# 4 年级

2022年4月26–28日

**RELEASED QUESTIONS**

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# 第1部分



## 参加本次考试的提示

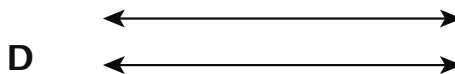
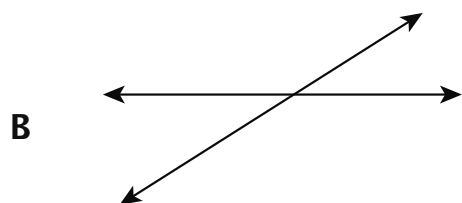
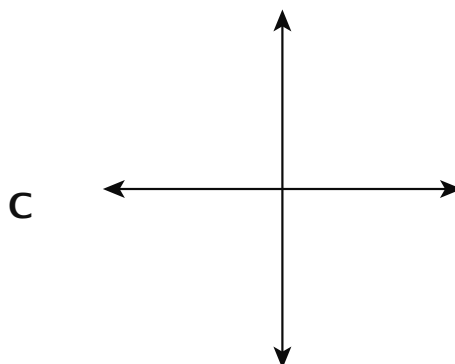
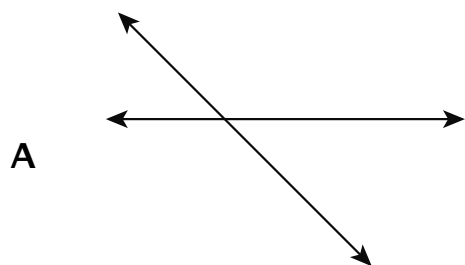
以下是一些建议,可以帮助你做到最好:

- 仔细阅读每一道题目,在做出选择前思考答案。
- 已向你提供了数学工具(一把尺子和一个量角器)供你在考试中使用。由你决定各工具将在何时有用。你应当在认为数学工具对你答题有帮助时使用它们。

1 朱莉娅每次将旋转器臂移动一度，一共移动了45次。朱莉娅移动旋转器臂的总度数是多少？

- A 1
- B 45
- C 90
- D 360

2 哪对线似乎是垂直的？



8 公园矩形部分的地面长 24 英尺，宽12 英尺。这个公园那一部分的地面面积是多少平方英尺？

A 36

B 72

C 144

D 288

9 数字 6,419 中 6 表示的值比数字 84,362 中 6 表示的值大多少倍？

A 10

B 100

C 1,000

D 10,000

继续



13 哪个方程表示以下陈述？

四十八是八的六倍

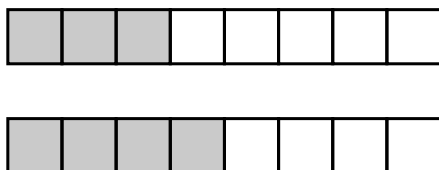
A  $48 - 6 = 8$

B  $48 + 6 = 8$

C  $48 = 6 \times 8$

D  $48 = 6 + 8$

14 以下模型中每个阴影部分均表示不同的分数。



这些模型阴影部分所表示的分数之和是多少？

A  $\frac{1}{8}$

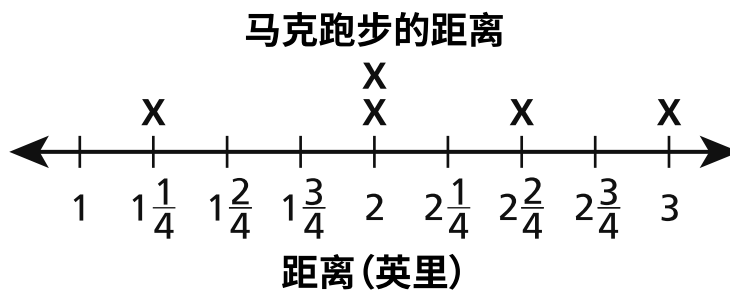
B  $\frac{3}{8}$

C  $\frac{4}{8}$

D  $\frac{7}{8}$

继续

- 16 以下折线图显示了马克上个周五天中每天跑步的距离。



马克上周总共跑了多少英里?

- A  $8\frac{1}{4}$
- B  $8\frac{3}{4}$
- C  $10\frac{2}{4}$
- D  $10\frac{3}{4}$
- 17 某个数字四舍五入到最接近的百位为 3,700。哪个数字 **不** 可能是被四舍五入之前的这个数字?
- A 3,614
- B 3,650
- C 3,720
- D 3,749

21 哪个列表仅显示小于  $\frac{1}{2}$  的分数?

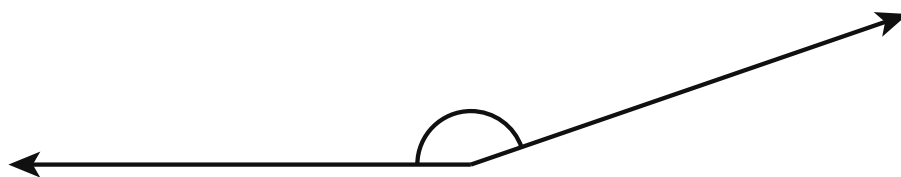
A  $\frac{1}{3}$ 、 $\frac{1}{5}$ 、 $\frac{1}{8}$

B  $\frac{2}{3}$ 、 $\frac{2}{4}$ 、 $\frac{2}{5}$

C  $\frac{1}{4}$ 、 $\frac{5}{8}$ 、 $\frac{6}{12}$

D  $\frac{3}{4}$ 、 $\frac{5}{6}$ 、 $\frac{7}{10}$

22 以下所示的角的测量值是多少?



A  $19^\circ$

B  $24^\circ$

C  $156^\circ$

D  $161^\circ$

**23** 在一场糕点售卖活动中销售布朗尼蛋糕。

- 有 3 盘布朗尼蛋糕出售
- 每盘有 5 排，每排有 5 个布朗尼蛋糕
- 每个布朗尼蛋糕售价为 \$2。

当所有布朗尼蛋糕都卖完时能赚多少钱？

- A** \$25
- B** \$50
- C** \$75
- D** \$150

**24** 表示  $\frac{1}{4}$  个整圆的角的测量值是多少度？

- A** 25
- B** 45
- C** 90
- D** 180

**继续**

27  $7,839 \times 9$  的值是多少?

A 70,471

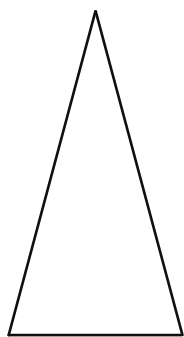
B 70,551

C 71,471

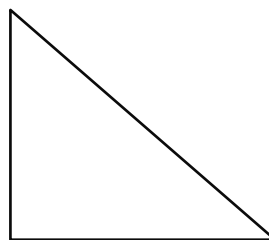
D 71,551

28 哪个图似乎是一个直角三角形?

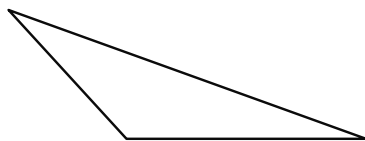
A



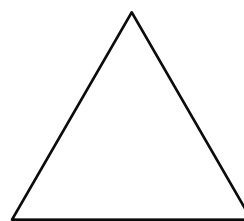
C



B



D



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**4年级**

**2022**

**数学测试**

**第1部分**

**2022年4月26–28日**

**Grade 4**

**2022**

**Mathematics Test**

**Session 1**

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*Chinese (Simplified) Edition*

*Grade 4 2022*

*Mathematics Test*

*Session 2*

*April 26–28, 2022*

# 纽约州测试计划 数学测试 第2部分

# 4 年级

2022年4月26–28日

**RELEASED QUESTIONS**

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## 第2部分



### 参加本次考试的提示

以下是一些建议,可以帮助你做到最好:

- 仔细阅读每一道题目,在做出选择或写下答案前思考答案。
- 已向你提供了数学工具(一把尺子和一个量角器)供你在考试中使用。由你决定各工具将在何时有用。你应当在认为数学工具对你答题有帮助时使用它们。
- 回答时务必写出你的演算过程。

- 31 乔纳斯先生点了一份披萨带回家。他的孩子吃了  $\frac{4}{8}$  的披萨，乔纳斯先生吃了  $\frac{2}{8}$  的披萨。

剩下的披萨留着以后吃。可使用哪个方程表示整个披萨？

- A  $\frac{2}{8} + \frac{3}{8} + \frac{4}{8} = 1$
- B  $\frac{1}{8} + \frac{2}{8} + \frac{4}{8} = 1$
- C  $\frac{2}{8} + \frac{2}{8} + \frac{4}{8} = 1$
- D  $\frac{2}{8} + \frac{4}{8} + \frac{4}{8} = 1$

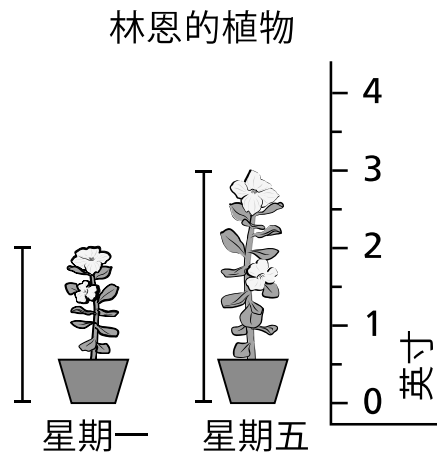
- 32 马特有 4 支钢笔。苏拥有的钢笔数是马特的 4 倍。克里斯拥有的钢笔数是苏的 2 倍。哪个方程可用于确定克里斯拥有的钢笔数？

- A  $4 + 4 + 2 = \underline{\quad ? \quad}$
- B  $4 + 4 \times 2 = \underline{\quad ? \quad}$
- C  $4 \times 4 \times 2 = \underline{\quad ? \quad}$
- D  $4 \times 4 + 2 = \underline{\quad ? \quad}$

继续

33

林恩在周一测量了一棵植物的高度，然后在周五又测量了一次。下图显示了这棵植物每天的高度，单位为英寸。



从周一到周五，这棵植物长了多少英寸？

- A 1
- B 2
- C 3
- D 5

34

山姆有 12 张棒球卡。阿里拥有的棒球卡数是山姆的 4 倍。可使用哪个方程来确定阿里拥有的棒球卡总数？

- A  $12 \div 4 = 3$
- B  $12 - 4 = 8$
- C  $12 + 4 = 16$
- D  $12 \times 4 = 48$

继续

第3页

- 35 以下所示的表达式的值是多少？

$$9\frac{4}{10} - 2\frac{8}{10}$$

- A  $6\frac{4}{10}$   
B  $6\frac{6}{10}$   
C  $7\frac{4}{10}$   
D  $7\frac{6}{10}$

- 36 卡姆有 35 张票可在游乐园使用。他想尽可能多地将这些票用在骑乘游乐设施上。每个骑乘游乐设施均需要 4 张票。在尽可能多地玩骑乘游乐设施后，卡姆将剩余多少张票？

- A 3  
B 4  
C 8  
D 9

继续

37 李女士班级中的学生收集了 268 本书捐赠给图书馆。这些书被装入 4 个大箱子中。每个箱子中均装入了相同数量的书。每个箱子中均装入了多少本书？

A 52

B 67

C 842

D 1,072

38 史密斯女士的四年级班中有 24 名学生。学校四年级学生人数是史密斯女士班中学生人数的 6 倍。可使用哪个方程来确定这所学校中四年级学生的总人数？

A  $24 \times \underline{\quad ? \quad} = 6$

B  $24 \div \underline{\quad ? \quad} = 6$

C  $24 \times 6 = \underline{\quad ? \quad}$

D  $24 + 6 = \underline{\quad ? \quad}$

39

以下描述了在某个游戏中赢得的票数与赢得的积分之间的关系。

- 每赢得 1 张票，赢得 9 分
- 每赢得 2 张票，赢得 18 分
- 每赢得 3 张票，赢得 27 分

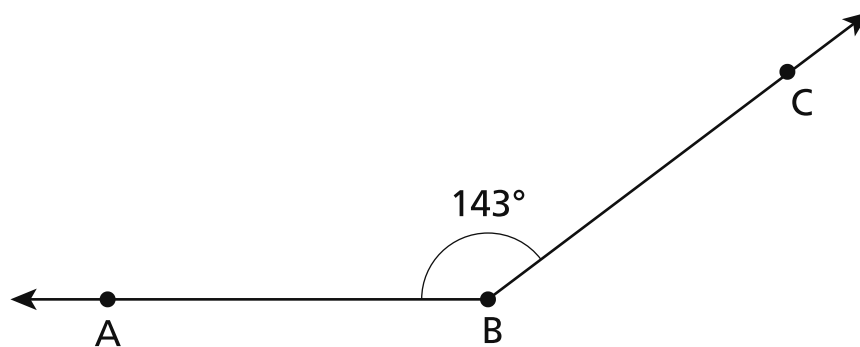
如果这个模式继续下去，当赢得 54 分时将赢得几张票？

**写出你的演算过程。**

答案 \_\_\_\_\_ 张票

**继续**

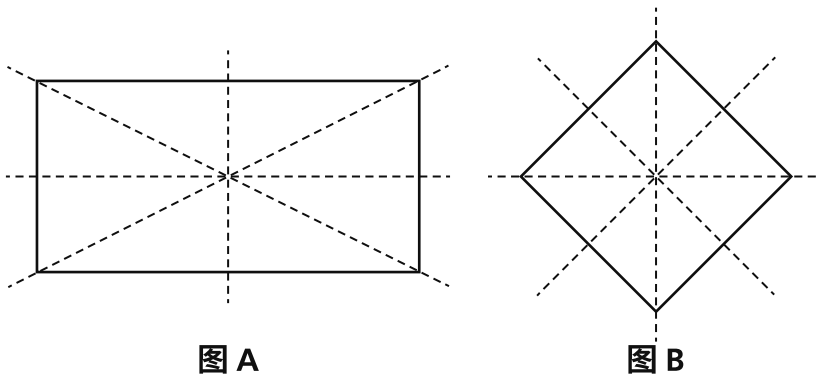
40 下图显示了角 ABC。



将射线 BD 添加到这个图中，创建平角 ABD 和新角 CBD。角 CBD 的测量值是多少度？  
写出你的演算过程。

答案 \_\_\_\_\_ 度

41 在以下显示的两个图中添加了虚线来表示对称线。



哪个图仅显示了正确的对称线？

解释你如何知道你的答案是正确的。

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42

城市 A 的人口为八万四千二百零六人。城市 B 的人口由表达式  $80,000 + 4,000 + 200 + 10 + 6$  表示。使用  $>$ 、 $<$  或  $=$  写一个数字句型，以比较城市 A 和城市 B 的人口。

*解释你如何知道你的答案是正确的。*

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**继续**

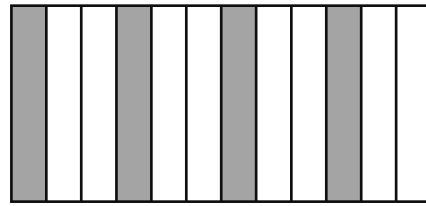
第9页

43

以下所示的模型大小相同，它们被分成多个相等的部分。每个模型中的阴影部分表示整数的一个分数。



模型 A



模型 B

还需要将模型 B 中的多少个部分变为阴影才能使模型 B 表示的分数等于模型 A 表示的分数？确保在你的答案中包含模型 B 表示的新分数。

*解释你如何知道你的答案是正确的。*

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继续

44

图书馆的某个部分有 36 个书架。每个书架正好可以放 48 本大小相似的书。所有书架将总共能放多少本书？

写出你的演算过程。

答案 \_\_\_\_\_ 本书

**45** 一名学生正在用木块搭建两座不同高度的塔。所有木块大小相同，高度均为  $\frac{3}{4}$  英寸。

矮塔为 5 个木块高，高塔为 9 个木块高。矮塔与高塔的高度之差是多少英寸？

*写出你的演算过程。*

答案 \_\_\_\_\_ 英寸

**停止**

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THE STATE EDUCATION DEPARTMENT  
THE UNIVERSITY OF THE STATE OF NEW YORK / ALBANY, NY 12234  
2022 Mathematics Tests Map to the Standards  
Grade 4

Question	Type	Key	Points	Standard	Cluster
<b>Session 1</b>					
1	Multiple Choice	B	1	CCSS.Math.Content.4.MD.C.5b	Measurement and Data
2	Multiple Choice	C	1	CCSS.Math.Content.4.G.A.1	Geometry
8	Multiple Choice	D	1	CCSS.Math.Content.4.MD.A.3	Measurement and Data
9	Multiple Choice	B	1	CCSS.Math.Content.4.NBT.A.1	Number and Operations in Base Ten
13	Multiple Choice	C	1	CCSS.Math.Content.4.OA.A.1	Operations and Algebraic Thinking
14	Multiple Choice	D	1	CCSS.Math.Content.4.NF.B.3a	Number and Operations - Fractions
16	Multiple Choice	D	1	CCSS.Math.Content.4.MD.B.4	Measurement and Data
17	Multiple Choice	A	1	CCSS.Math.Content.4.NBT.A.3	Number and Operations in Base Ten
21	Multiple Choice	A	1	CCSS.Math.Content.4.NF.A.2	Number and Operations - Fractions
22	Multiple Choice	D	1	CCSS.Math.Content.4.MD.C.6	Measurement and Data
23	Multiple Choice	D	1	CCSS.Math.Content.4.OA.A.3	Operations and Algebraic Thinking
24	Multiple Choice	C	1	CCSS.Math.Content.4.MD.C.5a	Measurement and Data
27	Multiple Choice	B	1	CCSS.Math.Content.4.NBT.B.5	Number and Operations in Base Ten
28	Multiple Choice	C	1	CCSS.Math.Content.4.G.A.2	Geometry
<b>Session 2</b>					
31	Multiple Choice	C	1	CCSS.Math.Content.4.NF.B.3d	Number and Operations - Fractions
32	Multiple Choice	C	1	CCSS.Math.Content.4.OA.A.2	Operations and Algebraic Thinking
33	Multiple Choice	A	1	CCSS.Math.Content.3.MD.B.4	Measurement and Data
34	Multiple Choice	D	1	CCSS.Math.Content.4.OA.A.1	Operations and Algebraic Thinking
35	Multiple Choice	B	1	CCSS.Math.Content.4.NF.B.3c	Number and Operations - Fractions
36	Multiple Choice	A	1	CCSS.Math.Content.4.OA.A.3	Operations and Algebraic Thinking
37	Multiple Choice	B	1	CCSS.Math.Content.4.NBT.B.6	Number and Operations in Base Ten
38	Multiple Choice	C	1	CCSS.Math.Content.4.OA.A.2	Operations and Algebraic Thinking
39	Constructed Response		2	CCSS.Math.Content.4.OA.C.5	Operations and Algebraic Thinking
40	Constructed Response		2	CCSS.Math.Content.4.MD.C.7	Measurement and Data
41	Constructed Response		2	CCSS.Math.Content.4.G.A.3	Geometry
42	Constructed Response		2	CCSS.Math.Content.4.NBT.A.2	Number and Operations in Base Ten
43	Constructed Response		2	CCSS.Math.Content.4.NF.A.2	Number and Operations - Fractions
44	Constructed Response		2	CCSS.Math.Content.4.NBT.B.5	Number and Operations in Base Ten
45	Constructed Response		3	CCSS.Math.Content.4.NF.B.4c	Number and Operations - Fractions

\*This item map is intended to identify the primary analytic skills necessary to successfully answer each question. However, some questions measure proficiencies described in multiple standards, including a balanced combination of procedural and conceptual understanding.