



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

**New York State Testing Program  
Grade 5  
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 5 2022*

*Mathematics Test*

*Session 1*

*April 26–28, 2022*

# 纽约州测试计划 数学测试 第1部分

# 5 年级

2022年4月26–28日

**RELEASED QUESTIONS**

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## 5 年级数学参考表

### 单位转换

1 英里 = 5,280 英尺

1 英里 = 1,760 码

1 磅 = 16 盎司

1 吨 = 2,000 磅

1 杯 = 8 液体盎司

1 品脱 = 2 杯

1 夸脱 = 2 品脱

1 加仑 = 4 夸脱

1 升 = 1,000 立方厘米

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### 公式

直角长方体

$$V = Bh \text{ 或 } V = lwh$$

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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。
- 你已获得了数学工具(一把尺子和一个量角器)和参考表供你在考试中使用。由你决定各工具及参考表将在何时有用。你应当在认为数学工具和参考表对你答题有帮助时使用它们。

1 吉尔有 4 张一美元的钞票，3 个 25 分硬币、4 个一毛硬币和 3 个便士。马克有 3 张一美元的钞票、4 个一毛硬币和 2 个便士。吉尔拥有的金额与马克拥有的金额之差是多少？

A \$1.01

B \$1.76

C \$7.85

D \$8.60

2  $6\frac{3}{5} + 3\frac{2}{3}$  的值是多少？

A  $2\frac{14}{15}$

B  $9\frac{4}{15}$

C  $9\frac{5}{8}$

D  $10\frac{4}{15}$

3 哪个二维图形始终是正四边形？

A 菱形

B 多边形

C 正方形

D 梯形

继续



6 贾内尔通过混合下列成分来制做水果宾治。

- 5 品脱橙汁
- 6 杯葡萄汁
- 8 杯苹果汁

贾内尔制做了多少夸脱的水果宾治？

- A 3
- B 6
- C 24
- D 96

7 莎拉正在建造一个鸟舍。她将 6 英尺长的板切割成每个  $\frac{1}{3}$  英尺长的多个部分。莎拉完成切割后这个板将被分成多少个部分？

- A 2
- B  $6\frac{1}{3}$
- C  $10\frac{1}{3}$
- D 18

继续

13 哪个值使以下比较成立？

$$\underline{\quad ? \quad} < 0.6$$

A 0.6

B 0.7

C 0.59

D 0.64

14 一名学生在 1 小时 34 分钟内完成了家庭作业。这名学生完成家庭作业用了多少分钟？

A 26

B 60

C 94

D 134

15 以下所示的表达式的值是多少？

$$2,158 \div 26$$

A 80

B 83

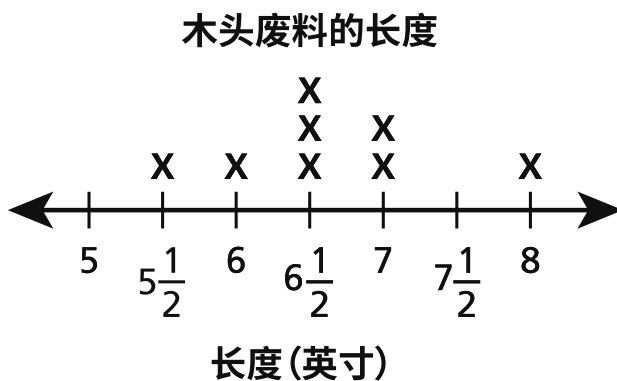
C 86

D 89

继续

18

托雷斯女士有一箱木头废料。她测量每块木头废料的长度，并精确到最接近的半英寸。结果显示在以下折线图上。



当将这些木头废料端对端放置时，它们的近似长度是多少英寸？

- A  $19\frac{1}{2}$
- B 33
- C  $45\frac{1}{2}$
- D 53

19

哪个表达式等同于  $65 \times 0.15$ ？

- A  $65 \times 0.1 + 0.05$
- B  $65 \times 0.05 + 0.1$
- C  $(65 \times 0.1) + (65 \times 0.5)$
- D  $(65 \times 0.1) + (65 \times 0.05)$

继续

20 以下所示的表达式的值是多少？

$$14\frac{1}{3} - 6\frac{5}{8}$$

A  $7\frac{1}{24}$

B  $7\frac{17}{24}$

C  $8\frac{7}{24}$

D  $8\frac{23}{24}$

21 特雷和他的4个朋友平分了一罐12盎司的苹果酱。每个人获得了多少盎司的苹果酱？

A  $\frac{5}{12}$

B  $2\frac{2}{5}$

C 17

D 60

继续

22  $\frac{3}{10} + \frac{27}{100}$  的值是多少?

A  $\frac{30}{10}$

B  $\frac{30}{100}$

C  $\frac{57}{10}$

D  $\frac{57}{100}$

23 有关  $425.378 \div 10^3$  的商的哪个陈述是正确的?

A 小数点位于 4 的左侧。

B 小数点位于 8 的右侧。

C 小数点位于 3 与 7 之间。

D 小数点位于 4 与 2 之间。

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**5年级**

**2022**

**数学测试**

**第1部分**

**2022年4月26–28日**

**Grade 5**

**2022**

**Mathematics Test**

**Session 1**

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名称: \_\_\_\_\_



*Chinese (Simplified) Edition*

*Grade 5 2022*

*Mathematics Test*

*Session 2*

*April 26–28, 2022*

**纽约州测试计划**

**数学测试**

**第2部分**

**5** 年级

**2022年4月26–28日**

**RELEASED QUESTIONS**

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1 加仑 = 4 夸脱

1 升 = 1,000 立方厘米

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### 公式

直角长方体

$$V = Bh \text{ 或 } V = lwh$$

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## 第2部分



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- 仔细阅读每一道题目,在做出选择或写下答案前思考答案。
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- 回答时务必写出你的演算过程。

31 以下所示的方程式中缺少的值是什么？

$$\frac{4}{10} + \frac{?}{100} = \frac{7}{10}$$

- A 1
- B 3
- C 10
- D 30

32 哪个表达式等同于  $\frac{2}{3} \times 7$ ？

- A  $2 \times 7 \div 3$
- B  $2 \times 3 \div 7$
- C  $7 \times 3 \div 2$
- D  $7 \div 2 \times 3$

33 哪个二维图形总是有 4 条等边和 4 个直角？

- A 平行四边形
- B 矩形
- C 菱形
- D 正方形

继续

34 哪个表达式具有小于 1 的值？

A  $\frac{3}{4} \times \frac{4}{3}$

B  $\frac{3}{4} \times \frac{6}{3}$

C  $\frac{3}{4} \times \frac{4}{4}$

D  $\frac{3}{4} \times \frac{8}{4}$

35 哪个分数具有与 0.28 相同的值？

A  $\frac{28}{1}$

B  $\frac{28}{10}$

C  $\frac{28}{100}$

D  $\frac{28}{1,000}$

36 戴维斯先生为家庭晚餐购买了 4 张披萨。他将每张披萨切成六等份。戴维斯先生的家庭晚餐中有多少块披萨？

A 6

B 10

C 20

D 24

继续

**37** 尼古拉斯早上喝了  $\frac{2}{3}$  升水，午饭时喝了  $\frac{1}{2}$  升水。在篮球练习期间，他又喝了  $\frac{2}{3}$  升水。尼古拉斯总共喝了多少升水？

**A**  $\frac{3}{5}$

**B**  $\frac{5}{8}$

**C**  $1\frac{1}{6}$

**D**  $1\frac{5}{6}$

**38** 用标准形式写的六百八十又千分之十四是什么？

**A** 608.014

**B** 608.14

**C** 680.014

**D** 680.14

继续

39

卡莉在一家宠物店工作。她的部分工作是为每个鱼缸添加正确量的水调节剂。以下列表提供了有关鱼缸数量和她使用的水调节剂数量的信息。

- 有 12 个鱼缸需要水调节器。
- 每个鱼缸装有 20 夸脱的水。
- 每 10 加仑水，卡莉使用 1 茶匙水调节剂。

对于 12 个鱼缸中的所有水，卡莉将使用的水调节剂的总茶匙数是多少？

**写出你的演算过程。**

答案 \_\_\_\_\_ 茶匙

**继续**

**40** 等边三角形的周长为  $\frac{1}{8}$  个单位。这个三角形每条边的长度是多少个单位？

写出你的演算过程。

答案 \_\_\_\_\_ 个单位

**继续**

41

在数字 714.438 中，小数点左侧数位 4 的值与小数点右侧数位 4 的值相比如何？

解释你的答案。

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**继续**

第7页



42

马迪买了 5 个笔记本和 3 支钢笔。以下列出了每一项的价格。

- 笔记本：每个 \$2.85
- 钢笔：每支 \$1.79

马迪使用 \$20.00 的钞票支付了笔记本和钢笔的费用。马迪将收到多少零钱？

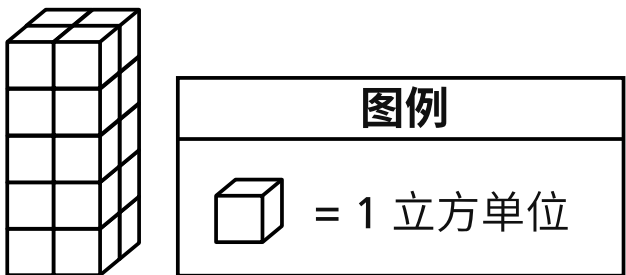
写出你的演算过程。

答案 \$ \_\_\_\_\_

继续

43

科林使用单位正方体建造了4个相同的塔。下图显示了其中一个塔。



科林建造的4个塔的总体积是多少立方单位？

写出你的演算过程。

答案 \_\_\_\_\_ 立方单位

44

山姆的目标是在一天结束前步行  $3\frac{1}{2}$  英里。他在午饭前走  $1\frac{1}{8}$  英里，休息后走  $\frac{3}{4}$  英里。为达到目标，山姆需要步行的剩余距离是多少英里？

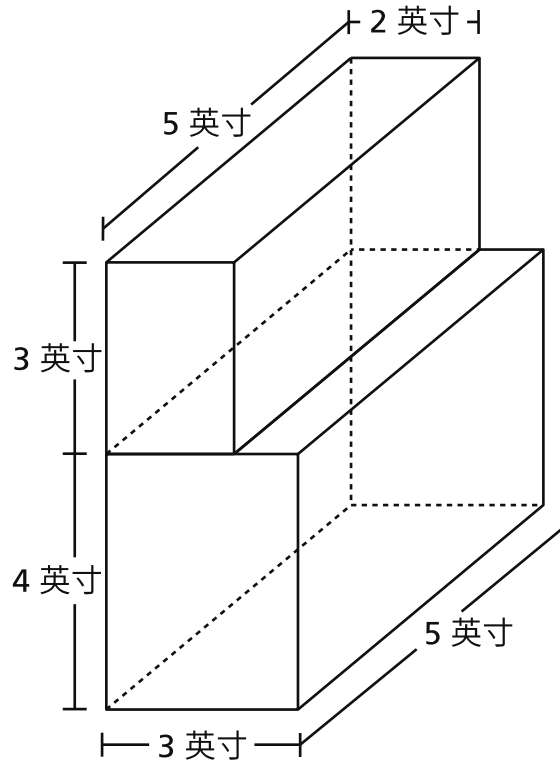
写出你的演算过程。

答案 \_\_\_\_\_ 英里

继续

45

以下显示了两个矩形棱柱的图。



解释确定这两个棱柱的组合体积的过程。务必在你的答案中包含总体积。

答案

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如果这个图顶部的棱柱为 4 英寸高，而不是 3 英寸高，那么顶部原始棱柱与顶部新棱柱的体积之差将是多少？

写出你的演算过程。

答案 \_\_\_\_\_ 立方英寸

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**5年级**

**2022**

**数学测试**

**第2部分**

**2022年4月26–28日**

**Grade 5**

**2022**

**Mathematics Test**

**Session 2**

**April 26–28, 2022**

THE STATE EDUCATION DEPARTMENT  
 THE UNIVERSITY OF THE STATE OF NEW YORK / ALBANY, NY 12234  
 2022 Mathematics Tests Map to the Standards  
 Grade 5

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

\*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.