



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.

姓名： \_\_\_\_\_



**Chinese (Traditional) Edition**

**Grade 4 2022**

**Mathematics Test**

**Session 1**

**April 26–28, 2022**

**紐約州考試計劃  
數學考試  
第 1 卷**

**4 年級**

**2022 年 4 月 26 至 28 日**

**RELEASED QUESTIONS**

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# 第 1 卷



## 考試建議

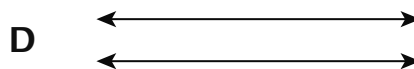
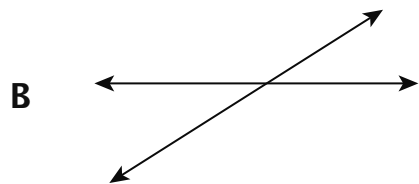
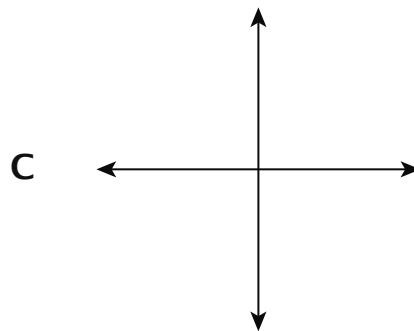
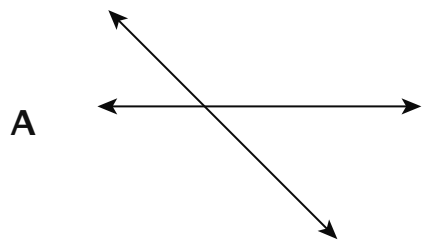
以下建議可協助你獲得好成績：

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1 茱莉亞每次將轉盤臂移動一度，共移動了 45 次。請問茱莉亞一共將轉盤臂移動了多少度？

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

2 以下哪組直線看起來垂直？



8

某公園有一塊矩形地面，該矩形的長為 24 英尺，寬為 12 英尺。請問該公園這部分地面的面積是多少平方英尺？

- A 36
- B 72
- C 144
- D 288

9

數字 6,419 中的數字 6 表示的數值比數字 84,362 中的數字 6 表示的數值大多少倍？

- A 10
- B 100
- C 1,000
- D 10,000

繼續



**13**

請問哪個方程式代表以下陳述？

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**

下面的模型都用陰影來表示不同的分數。



模型陰影部分所代表的分數之和是多少？

**A**  $\frac{1}{8}$

**B**  $\frac{3}{8}$

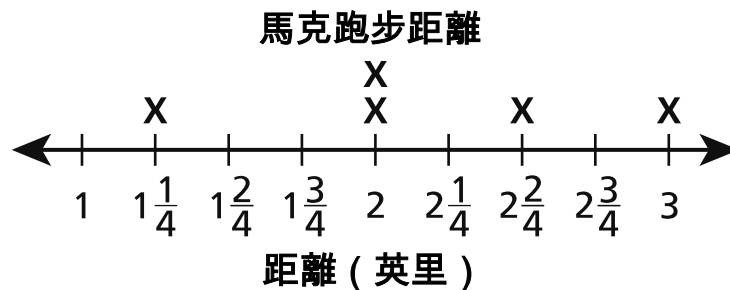
**C**  $\frac{4}{8}$

**D**  $\frac{7}{8}$

**繼續**

16

以下折線圖顯示了馬克在上個星期的五天當中每天的跑步距離。



請問馬克在上個星期總共跑了多少英里？

- A  $8\frac{1}{4}$
- B  $8\frac{3}{4}$
- C  $10\frac{2}{4}$
- D  $10\frac{3}{4}$

17

一個數字在四捨五入到最接近的百位時為 3,700。請問下面哪個數字不可能是四捨五入前的數字？

- A 3,614
- B 3,650
- C 3,720
- D 3,749

繼續

21 以下哪組數字顯示的分數都小於  $\frac{1}{2}$  ?

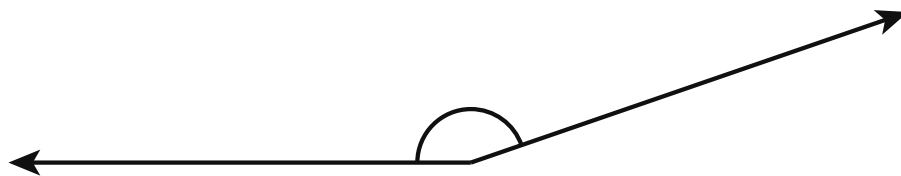
A  $\frac{1}{3}$ 、 $\frac{1}{5}$ 、 $\frac{1}{8}$

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 下面這個角是多少度?



A  $19^\circ$

B  $24^\circ$

C  $156^\circ$

D  $161^\circ$

繼續

23

一家麵包店在售賣布朗尼蛋糕。

- 待售的布朗尼蛋糕有 3 盤
- 每盤有 5 排，每排有 5 個布朗尼蛋糕
- 每個布朗尼蛋糕的售價為 \$2

如果所有布朗尼蛋糕全部售出，一共會得到多少錢？

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

24

如果一個角在整個圓中占  $\frac{1}{4}$ ，請問這個角是多少度？

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

繼續

27 請問  $7,839 \times 9$  的值是多少？

A 70,471

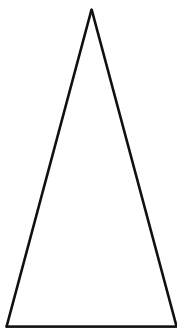
B 70,551

C 71,471

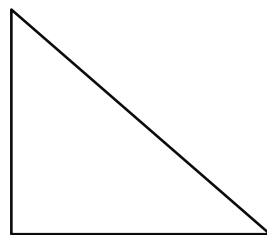
D 71,551

28 下面哪個圖形看起來是直角三角形？

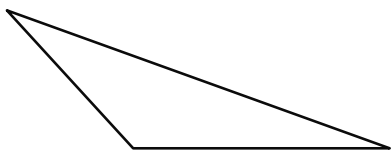
A



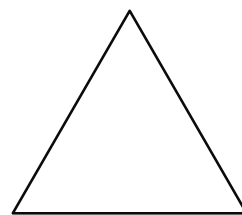
C



B



D



繼續

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**4 年級**

**2022**

**數學考試**

**第 1 卷**

**2022 年 4 月 26 至 28 日**

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*Chinese (Traditional) Edition*

*Grade 4 2022*

*Mathematics Test*

*Session 2*

*April 26–28, 2022*

紐約州考試計劃  
數學考試  
第 2 卷

4 年級


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# 第 2 卷



## 考試建議

以下建議可協助你獲得好成績：

- 在作出選擇或回答問題之前，請仔細閱讀每一試題，好好思考後再作答。
- 本次考試提供數學工具讓你使用（一把尺子和一個量角器）。你可以自行決定使用各個工具的時機。考試當中只要你覺得使用數學工具能協助你解答就可以使用。
- 如果有相關要求，請寫出你的計算過程。

- 31 尤納斯先生訂購了一份披薩帶回家。他的孩子吃了披薩的  $\frac{4}{8}$ ，尤納斯先生吃了披薩的  $\frac{2}{8}$ 。剩下的披薩留著以後再吃。請問下面哪個方程式可用來表示整塊披薩？

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 馬特有 4 支筆。蘇的筆數是馬特的 4 倍。克裡斯的筆數是蘇的 2 倍。請問下面哪個方程式可用來計算克裡斯擁有的筆數？

A  $4 + 4 + 2 = \underline{\quad ? \quad}$

B  $4 + 4 \times 2 = \underline{\quad ? \quad}$

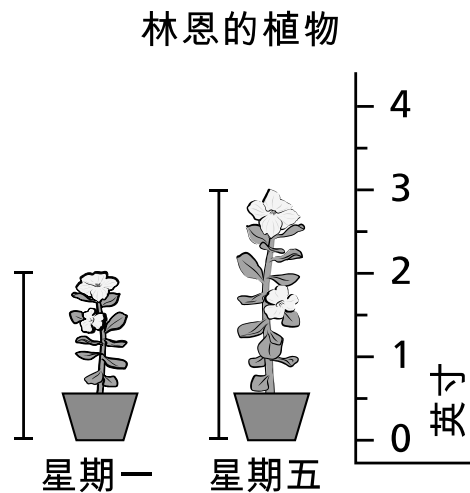
C  $4 \times 4 \times 2 = \underline{\quad ? \quad}$

D  $4 \times 4 + 2 = \underline{\quad ? \quad}$

繼續

33

林恩星期一測量了某植物的高度，星期五又測了一次。下圖顯示了該植物每天的高度（單位：英寸）。



請問該植物星期一到星期五之間生長了多少英寸？

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

34

薩姆有 12 張棒球卡。阿裡的棒球卡數量是薩姆的 4 倍。請問哪個方程式可用來計算阿裡擁有的總棒球卡數？

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

**繼續**

**35**

請問以下所示表達式的值是多少？

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

**A**  $6\frac{4}{10}$

**B**  $6\frac{6}{10}$

**C**  $7\frac{4}{10}$

**D**  $7\frac{6}{10}$

**36**

凱姆在遊樂園可以使用 35 張票。他想把這些票盡可能多地用來乘坐娛樂設施。每次乘坐娛樂設施需要 4 張票。請問凱姆盡可能多地坐完娛樂設施後還剩幾張票？

**A** 3

**B** 4

**C** 8

**D** 9

**繼續**

37

李女士班上的學生收集了 268 本書贈送給圖書館。這些書被裝到了 4 個大箱子中。每個箱子中裝入的書數量一樣。請問每個箱子中裝入了多少本書？

- A 52
- B 67
- C 842
- D 1,072

38

史密斯女士的四年級班上有 24 名學生。學校四年級學生的總數是史密斯女士班級學生人數的 6 倍。請問哪個方程式可用於計算學校四年級學生的總數？

- A  $24 \times \underline{\quad ? \quad} = 6$
- B  $24 \div \underline{\quad ? \quad} = 6$
- C  $24 \times 6 = \underline{\quad ? \quad}$
- D  $24 + 6 = \underline{\quad ? \quad}$

繼續

39

在某場比賽中，獲得的票數與分數之間的關係如下所示。

- 每獲得 9 分，獲得 1 張門票
- 每獲得 18 分，獲得 2 張門票
- 每獲得 27 分，獲得 3 張門票

如果按照這種規律繼續得分，請問獲得 54 分時會獲得多少張門票？

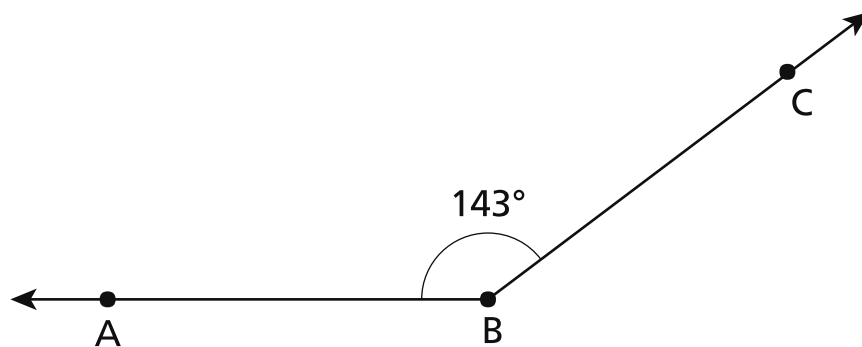
請寫出你的計算過程。

答案 \_\_\_\_\_ 張門票

繼續

40

下圖顯示的是角 ABC。



請向圖中新增射線 BD 來建立平角 ABD 和新角 CBD. 請問角 CBD 的度數是多少？

請寫出你的計算過程。

答案 \_\_\_\_\_ 度

下面兩個圖中新增了虛線來代表對稱線。

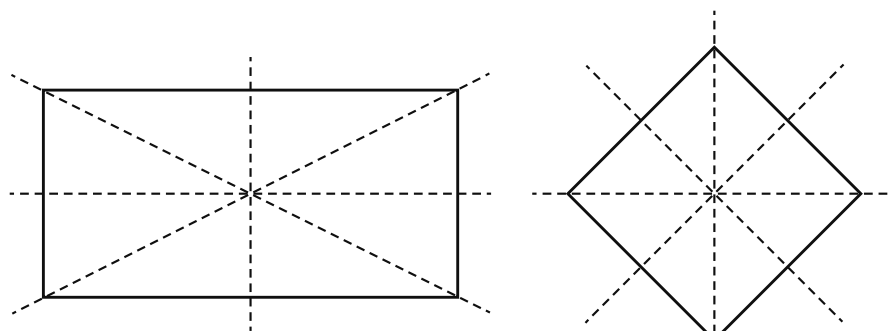


圖 A

圖 B

請問哪個圖中僅顯示了正確的對稱線？

請解釋你如何確認你的答案正確。

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繼續



42

A 市的人口有八萬四千兩百零六人。B 市的人口數可以用表達式  $80,000 + 4,000 + 200 + 10 + 6$  表示。請使用  $>$ 、 $<$  或  $=$  寫一個算式來比較 A 市和 B 市的人口數量。

請解釋你如何確認你的答案正確。

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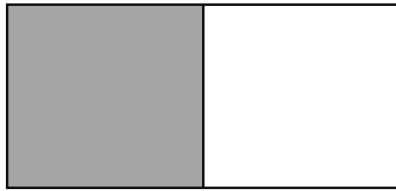
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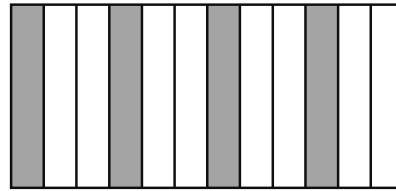
繼續

43

下面顯示的兩個模型大小相同，兩者都被分成相等的部分。每個模型中的陰影部分代表整體的一個分數。



模型 A



模型 B

請問模型 B 需要再增加幾個陰影部分，才能使模型 B 所表示的分數等於模型 A 所表示的分數？請務必在答案中包含模型 B 所表示的新分數。

請解釋你如何確認你的答案正確。

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繼續

44

圖書館某個區域有 36 個書架。每個書架正好可以放置 48 本相似尺寸的書。請問所有書架一共可以放置多少本書？

請寫出你的計算過程。

答案 \_\_\_\_\_ 本書

繼續

45

一名學生正在使用木塊搭建兩座不同高度的塔。所有木塊的尺寸一樣，高為  $\frac{3}{4}$  英寸。矮塔的高度為 5 個木塊，高塔的高度為 9 個木塊。請問矮塔與高塔的高度相差多少英寸？

請寫出你的計算過程。

答案 \_\_\_\_\_ 英寸

**停止作答**

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**4 年級**

**2022**

**數學考試**

**第 2 卷**

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**Session 2**

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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.