



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

**New York State Testing Program  
Grade 6  
Mathematics Test  
Chinese (Traditional)**

**Released Questions**

**2024**

New York State administered the Mathematics Tests in May 2024 and is 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 2024 Exams

#### **Background**

As in past years, SED is releasing large portions of the 2024 NYS Grades 3–8 English Language Arts and Mathematics test materials for review, discussion, and use.

For 2024, included in these released materials are at least 75 percent of the test questions that appeared on the 2024 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 Next Generation 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.

##### **One-Credit Constructed-Response Questions**

One-credit constructed-response questions require students to complete a task and provide only their final answer. These one-credit questions will often require multiple steps, assessing procedural skills, as well as conceptual understanding and application. While students may show how they arrived at their final answer, only the final answer will be scored.

##### **Two-Credit Constructed-Response Questions**

Two-credit constructed-response questions require students to complete tasks and show their work. These two-credit 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.

##### **Three-Credit Constructed-Response Questions**

Three-credit constructed-response questions ask students to show their work in completing two or more tasks or a more extensive problem. These three-credit response questions allow students to show their understanding of mathematical procedures, conceptual understanding, and application. Three-credit response questions may also assess student reasoning and the ability to critique the arguments of others. The scoring rubric for all 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 Next Generation Learning Standards Alignment**

The alignment(s) to the New York State P–12 Next Generation 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-credit and three-credit 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 Next Generation 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 6 2024*

*Mathematics Test*

*Session 1*

*Spring 2024*



**紐約州測驗計劃**

**數學考試**

**第 1 卷**

**6 年級**

**2024 年春季**

**RELEASED QUESTIONS**

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# 第 1 卷



## 應考建議

以下是一些建議，可以幫助你做到最好：

- 仔細閱讀每道題目。慢慢來，別著急。
- 你已獲得了一把尺子、一個量角器和一張參考表，如果它們對你答題有幫助，你可以在測試中使用。

2 哪個運算式表示比以下的乘積多 5：2 和  $y$ ？

A  $2 + y + 5$

B  $2y + 5$

C  $5 + \frac{2}{y}$

D  $5 + \frac{y}{2}$

繼續

3

$b$ 為哪個值時可使不等式  $3b > 12$  成立？

- A 2
- B 3
- C 4
- D 5

4

可使用一個座標平面來顯示兩個位置之間的單位距離。以下列出了傑克的家和商店的位置。

- 傑克的家位於  $(-7, -8)$ 。
- 商店位於  $(-7, 4)$ 。

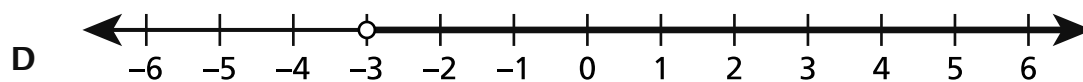
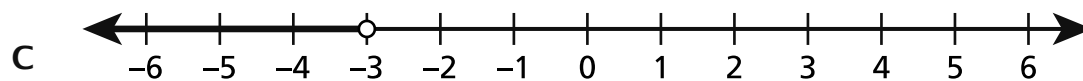
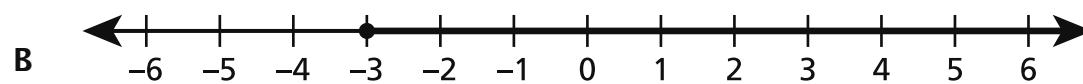
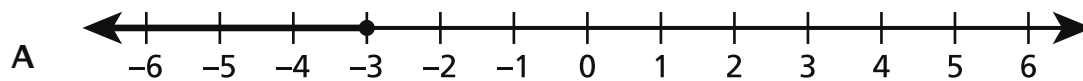
傑克的家與商店之間的距離是多少個單位？

- A 4
- B 8
- C 12
- D 14

繼續



11

哪個數軸表示  $x \geq -3$  ?

繼續

14 運算式  $8^2 \div 4 \times 2^3$  的值是多少？

- A 16
- B 24
- C 96
- D 128

15 本購買了  $1\frac{1}{4}$  磅堅果並將它們放入袋子中。每個袋子裝  $\frac{1}{8}$  磅堅果。他將所有堅果滿滿地裝入每個袋子中。本將堅果裝入了多少個袋子中？

- A  $\frac{5}{32}$
- B  $1\frac{1}{8}$
- C 2
- D 10

18 哪個運算式表示數字  $-2\frac{1}{2}$  的相反數？

A  $-\left(2\frac{1}{2}\right)$

B  $-(-2\frac{1}{2})$

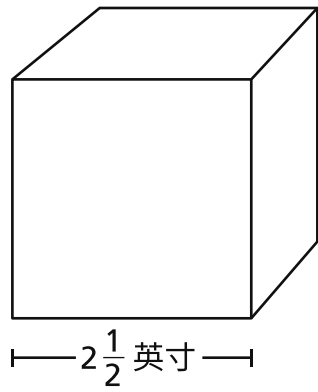
C  $-2\left(\frac{1}{2}\right)$

D  $2\left(-\frac{1}{2}\right)$

繼續

20

以下顯示了一個正方體的圖。



這個正方體的體積是多少立方英寸？

- A  $1\frac{7}{8}$
- B  $7\frac{1}{2}$
- C  $15\frac{5}{8}$
- D  $20\frac{5}{6}$

22

泰咪和雅各收集郵票。泰咪有  $s$  張郵票。雅各的郵票數比泰咪擁有的郵票數的 3 倍少 4 張。可使用哪個運算式來表示雅各擁有的郵票的數量？

A  $3 - 4s$

B  $3s - 4$

C  $4 - 3s$

D  $4s - 3$

23

一個容器可容納 6 加侖液體。該容器可容納多少品脫液體？

A 6

B 8

C 24

D 48

繼續

26 哪個有序對表示點  $(-4, 6)$  在  $x$  軸上反射的點的位置？

A  $(4, 6)$

B  $(-4, -6)$

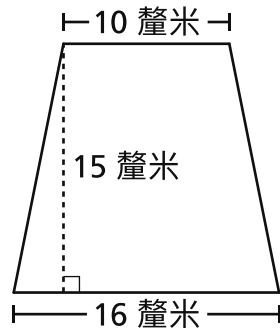
C  $(6, -4)$

D  $(-6, 4)$

繼續

28

以下顯示了一個等腰梯形。



這個等腰梯形的面積是多少平方釐米？

- A 120
- B 150
- C 195
- D 240

29

以下是一個不等式。

$$-\frac{9}{20} > -\frac{21}{24}$$

關於數軸上數字的位置，哪個陳述是正確的？

- A  $-\frac{9}{20}$  在  $-\frac{21}{24}$  的左側，並在數軸上 0 的右側。
- B  $-\frac{9}{20}$  在  $-\frac{21}{24}$  的右側，並在數軸上 0 的左側。
- C  $-\frac{9}{20}$  在  $-\frac{21}{24}$  的左側，並在數軸上 0 的左側。
- D  $-\frac{9}{20}$  在  $-\frac{21}{24}$  的右側，並在數軸上 0 的右側。

繼續

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**6年級**  
**數學測驗**  
**第 1 卷**  
**2024 年春季**

**Grade 6**  
**Mathematics Test**  
**Session 1**  
**Spring 2024**



姓名: \_\_\_\_\_

*Chinese (Traditional) Edition*

*Grade 6 2024*

*Mathematics Test*

*Session 2*

*Spring 2024*



# 紐約州測驗計劃

## 數學考試

### 第 2 卷

# 6 年級

2024 年春季

**RELEASED QUESTIONS**

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# 第 2 卷



## 應考建議

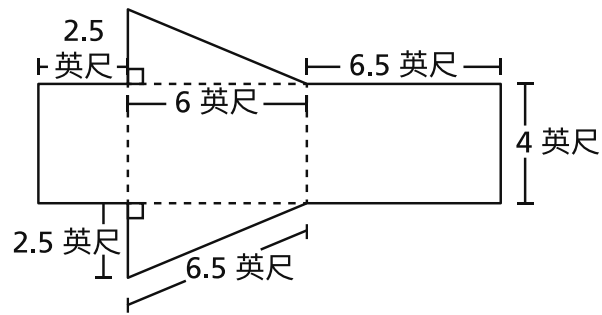
以下是一些建議，可以幫助你做到最好：

- 仔細閱讀每道題目。慢慢來，別著急。
- 你已獲得了一把尺子、一個量角器、一張參考表和一個計算器，如果它們對你答題有幫助，你可以在測試中使用。
- 如果有相關要求，請寫出你的計算過程。
- 如果有相關要求，回答時務必解釋你的答案。

31 一份 8 盎司的蘇打水含有 104 卡路里的熱量。1 盎司蘇打水含有多少卡路里的熱量？

- A 13
- B 26
- C 52
- D 96

32 約瑟搭建了一個直角三棱柱形狀的滑板坡道。以下展開圖顯示了該坡道各部分的尺寸。



該坡道的表面積是多少平方英尺？

- A 90
- B 75
- C 51
- D 44

繼續

33 數字 4 是哪個數字的 16%？

- A 12
- B 20
- C 25
- D 64

34 一台機器以恒定速率生產巧克力。該機器在 42 分鐘內生產出 7 磅巧克力。該機器生產 9 磅巧克力將需要多少分鐘？

- A 6
- B 15
- C 54
- D 63

35 呈直角矩形棱柱形狀的穀物盒的尺寸如下所示。

$$8\frac{1}{10} \text{ 英寸和 } 4\frac{4}{5} \text{ 英寸和 } 12\frac{1}{2} \text{ 英寸}$$

這個麥片盒的體積是多少立方英寸？

- A 24
- B  $25\frac{2}{5}$
- C  $384\frac{1}{25}$
- D 486

繼續

36

一家教育公司輔導學生的費用為每小時 \$25.00。輔導多少小時的費用將為 \$62.50？

A  $2\frac{1}{2}$

B  $3\frac{1}{2}$

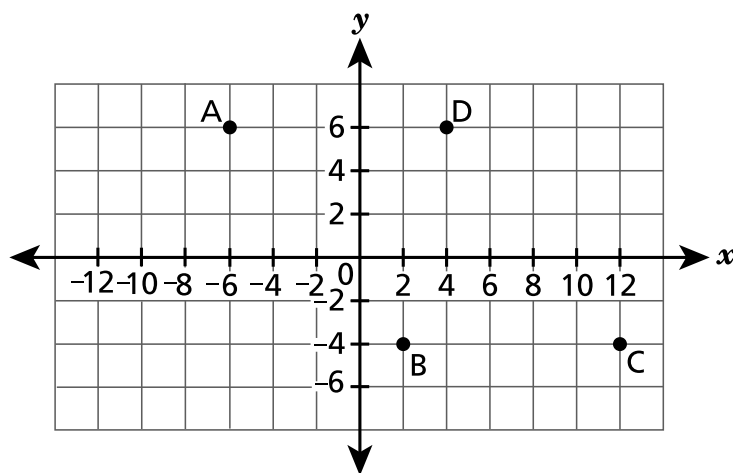
C  $37\frac{1}{2}$

D  $87\frac{1}{2}$

繼續

37 答對這道題可獲得 1 個積分。

在以下所示的座標平面上繪製了一個平行四邊形的四個頂點。



頂點 A 與 D 之間的距離是多少個單位？

答案 \_\_\_\_\_ 個單位

繼續

38 答對這道題可獲得 1 個積分。

$n$  的值是多少可使方程式  $\frac{n}{8} = 17$  成立？

答案 \_\_\_\_\_

繼續



39

答對這道題可獲得 1 個積分。

一位畫家採用 6 加侖橙色顏料與 8 加侖藍色顏料的比例。如果畫家使用 1 加侖藍色顏料，那麼其將使用多少加侖的橙色顏料？

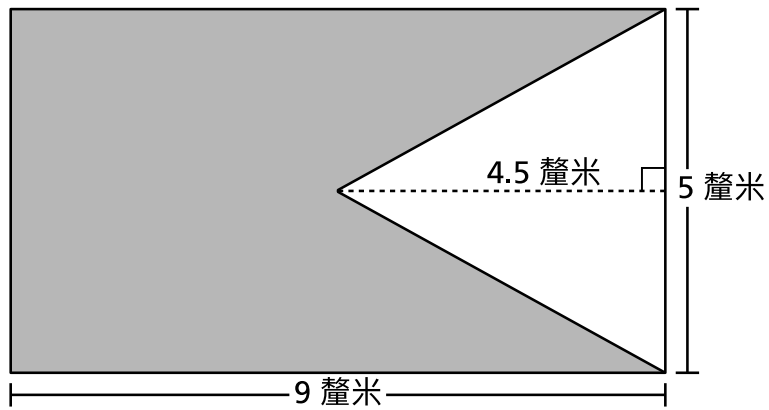
答案 \_\_\_\_\_ 加侖

繼續

40

答對這道題可獲得 2 個積分。

以下顯示了一個帶有陰影部分的矩形旗幟的圖。



這個旗幟陰影部分的面積是多少平方釐米？

請寫出你的計算過程。

答案 \_\_\_\_\_ 平方釐米

繼續

41

答對這道題可獲得 2 個積分。

一名學生聲稱運算式  $6 + 8x$  等於運算式  $3(3 + 5x)$ 。這個學生的說法有什麼不正確的地方？務必在你的答案中包含等於  $3(3 + 5x)$  的運算式。

請解釋你的答案。

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繼續

42

答對這道題可獲得 2 個積分。

邁克每次乘坐公共汽車都需要一張車票。假定方程式為  $c = 2.75t$ ，邁克購買的車票數量  $t$  與總費用  $c$  之間的關係是什麼？務必在你的答案中確定哪個變數是自變數，哪個變數是因變數。

請解釋你的答案。

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繼續

43

答對這道題可獲得 2 個積分。

一名學生聲稱 4 是 24 和 40 的最大公因數，因為這兩個數字都是 4 的倍數。該學生的說法是否正確？

請解釋你是如何確定自己的答案的。

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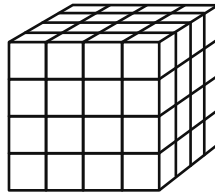
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繼續

44

答對這道題可獲得 2 個積分。

以下顯示了一個由單位正方體組成的棱柱。



該棱柱的體積表示什麼完美正方體？務必在你的答案中包含你對體積和指數的瞭解。

請解釋你的答案。

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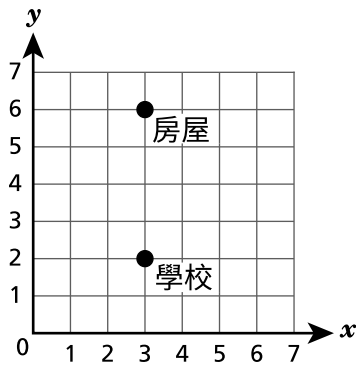
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繼續

45

答對這道題可獲得 2 個積分。

傑克的學校和家的位置表示在以下所示的座標平面上。



從傑克的學校到他家的距離是多少個單位？務必包含這兩個位置的座標以及如何使用這些座標來確定你的答案。

請解釋你如何確認你的答案正確。

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繼續

**46**

答對這道題可獲得 3 個積分。

雷克斯和尼祿正在攢錢買新自行車。他們均從 \$0.00 開始攢錢，並以恒定速率攢錢 16 個月。下表顯示了雷克斯和尼祿在不同月數結束時攢錢的總錢數（單位為美元）。

雷克斯攢錢的錢數

月數	2	4	6	8
攢錢的錢數（美元）	18	36	54	72

尼祿攢錢的錢數

月數	3	6	9	12
攢錢的錢數（美元）	36	72	108	144

在 16 個月結束時，雷克斯攢錢的錢數與尼祿攢錢的錢數之差是多少？

請寫出你的計算過程。

答案 \$ \_\_\_\_\_

**停止作答**



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**6年級  
數學測驗  
第 2 卷  
2024 年春季**

**Grade 6  
Mathematics Test  
Session 2  
Spring 2024**

**THE STATE EDUCATION DEPARTMENT**  
**THE UNIVERSITY OF THE STATE OF NEW YORK / ALBANY, NY 12234**  
**2024 Mathematics Tests Map to the Standards**  
**Grade 6**

Question	Type	Key	Points	Standard	Cluster	Subscore	Secondary Standard(s)
<b>Session 1</b>							
2	Multiple Choice	B	1	NGLS.Math.Content.NY-6.EE.2a	Expressions and Equations	Expressions and Equations	
3	Multiple Choice	D	1	NGLS.Math.Content.NY-6.EE.5	Expressions and Equations	Expressions and Equations	
4	Multiple Choice	C	1	NGLS.Math.Content.NY-6.NS.8	The Number System	The Number System	
11	Multiple Choice	B	1	NGLS.Math.Content.NY-6.EE.8	Expressions and Equations	Expressions and Equations	
14	Multiple Choice	D	1	NGLS.Math.Content.NY-6.EE.1	Expressions and Equations	Expressions and Equations	
15	Multiple Choice	D	1	NGLS.Math.Content.NY-6.NS.1	The Number System	The Number System	
18	Multiple Choice	B	1	NGLS.Math.Content.NY-6.NS.6a	The Number System	The Number System	
20	Multiple Choice	C	1	NGLS.Math.Content.NY-6.G.2	Geometry		
22	Multiple Choice	B	1	NGLS.Math.Content.NY-6.EE.6	Expressions and Equations	Expressions and Equations	
23	Multiple Choice	D	1	NGLS.Math.Content.NY-6.RP.3d	Ratios and Proportional Relationships	Ratios and Proportional Relationships	
26	Multiple Choice	B	1	NGLS.Math.Content.NY-6.NS.6b	The Number System	The Number System	
28	Multiple Choice	C	1	NGLS.Math.Content.NY-6.G.1	Geometry		
29	Multiple Choice	B	1	NGLS.Math.Content.NY-6.NS.7a	The Number System	The Number System	
<b>Session 2</b>							
31	Multiple Choice	A	1	NGLS.Math.Content.NY-6.RP.2	Ratios and Proportional Relationships	Ratios and Proportional Relationships	
32	Multiple Choice	B	1	NGLS.Math.Content.NY-6.G.4	Geometry		
33	Multiple Choice	C	1	NGLS.Math.Content.NY-6.RP.3c	Ratios and Proportional Relationships	Ratios and Proportional Relationships	
34	Multiple Choice	C	1	NGLS.Math.Content.NY-6.RP.3b	Ratios and Proportional Relationships	Ratios and Proportional Relationships	
35	Multiple Choice	D	1	NGLS.Math.Content.NY-6.G.2	Geometry		
36	Multiple Choice	A	1	NGLS.Math.Content.NY-6.EE.7	Expressions and Equations	Expressions and Equations	NGLS.Math.Content.NY-6.RP.3b
37	Constructed Response	n/a	1	NGLS.Math.Content.NY-6.G.3	Geometry		
38	Constructed Response	n/a	1	NGLS.Math.Content.NY-6.EE.7	Expressions and Equations	Expressions and Equations	
39	Constructed Response	n/a	1	NGLS.Math.Content.NY-6.RP.2	Ratios and Proportional Relationships	Ratios and Proportional Relationships	NGLS.Math.Content.NY-6.RP.3b
40	Constructed Response	n/a	2	NGLS.Math.Content.NY-6.G.1	Geometry		
41	Constructed Response	n/a	2	NGLS.Math.Content.NY-6.EE.4	Expressions and Equations	Expressions and Equations	
42	Constructed Response	n/a	2	NGLS.Math.Content.NY-6.EE.9	Expressions and Equations	Expressions and Equations	
43	Constructed Response	n/a	2	NGLS.Math.Content.NY-6.NS.4	The Number System	The Number System	
44	Constructed Response	n/a	2	NGLS.Math.Content.NY-6.G.5	Geometry		
45	Constructed Response	n/a	2	NGLS.Math.Content.NY-6.NS.8	The Number System	The Number System	
46	Constructed Response	n/a	3	NGLS.Math.Content.NY-6.RP.3a	Ratios and Proportional Relationships	Ratios and Proportional Relationships	

\*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.