



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

**New York State Testing Program  
Grade 7  
Mathematics Test  
Chinese (Simplified)**

**Released Questions**

**2021**

New York State administered the Mathematics Tests in May 2021 and is now making the questions from Session 1 of these tests available for review and use. Only Session 1 was required in 2021.



## New York State Testing Program Grades 3–8 Mathematics

### Released Questions from 2021 Tests

#### **Background**

In 2013, New York State (NYS) began administering tests designed to assess student performance in accordance with the instructional shifts and rigor demanded by the new New York State P–12 Learning Standards in Mathematics. To help in this transition to new assessments, the New York State Education Department (NYSED) has been releasing an increasing number of test questions from the tests that were administered to students across the State in the spring. This year, SED is again releasing 2021 NYS Grades 3–8 English Language Arts and Mathematics test materials for review, discussion, and use.

In February 2021, with the ongoing COVID-19 pandemic still forcing restrictions on all educational and learning activities statewide, NYSED submitted two federal waiver requests related to state assessment and accountability requirements. The waiver requests addressed the unique circumstances caused by the pandemic that have resulted in many students receiving some or all of their instruction remotely.

Later that month, the United States Department of Education (USDE) informed states that it would not grant a blanket waiver for state assessments. However, the USDE agreed to uncouple state assessments from the Every Student Succeeds Act (ESSA) accountability requirements so that test results will be used solely as a measure of student learning. Additionally, it was decided that NYSED would administer only Session 1 of the Grades 3–8 ELA and Mathematics Tests for the Spring 2021 administration and that the tests would include previously administered questions.

The decision to use previously administered test questions in this extraordinary year was based on guidance from nationally recognized experts in the assessment field and was recommended in a [publication](#) from the Council of Chief State School Officers to state education departments. Reusing test questions provided the benefit of having established scale scores and stable item parameters. Using previously administered test questions also ensured that it will be possible to develop new test forms for 2022 and beyond. Although it was not the driver of the decision, the reuse of previously administered test questions provided an opportunity for cost savings during these unique circumstances where the instructional models used by schools varied throughout the State.

For 2021, the entire Session 1 booklet is being released as this is all that students were required to take. Additionally, NYSED is providing a map that details what learning standards 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 NYSED'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.

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

The alignment to the New York State P–12 Learning Standards for Mathematics is intended to identify the primary analytic skills necessary to successfully answer each question. 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. Specific criteria for writing test questions, as well as additional assessment information, are available at <http://www.engageny.org/common-core-assessments>.

姓名: \_\_\_\_\_

**Chinese (Simplified) Edition**

**Grade 7**

**Mathematics Test**

**Session 1**

**v202**



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**纽约州测试项目  
数学测试  
第 1 部分**

**7 年级**

**v202**

**Released Questions**

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# 7 年级数学参考表

## 单位转换

1 英寸 = 2.54 厘米  
1 米 = 39.37 英寸  
1 英里 = 5,280 英尺  
1 英里 = 1,760 码  
1 英里 = 1.609 公里

1 公里 = 0.62 英里  
1 磅 = 16 盎司  
1 磅 = 0.454 公斤  
1 公斤 = 2.2 磅  
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 加仑 = 3.785 升  
1 升 = 0.264 加仑  
1 升 = 1,000 立方厘米

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## 公式

三角形

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

---

平行四边形

$$A = bh$$

---

圆形

$$A = \pi r^2$$

---

圆形

$$C = \pi d \text{ 或 } C = 2\pi r$$

---

普通棱柱

$$V = Bh$$

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# 第 1 部分



## 考试提示

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，并在做出选择前思考答案。
- 已向你提供了数学工具（一把尺子、一个量角器和一台计算器）和参考表供你在考试中使用。由你决定各工具和参考表将在何时有用。你应当在数学工具和参考表对你答题有帮助时使用它们。



1 克拉拉去打迷你高尔夫球。她支付了入场券 \$7.50，且每打一轮高尔夫球支付 \$6.25。克拉拉为入场券和所有轮次总共支付了 \$26.25。请问哪个方程式可以计算出克拉拉所玩的轮次数  $x$ ？

A  $6.25x + 7.50 = 26.25$

B  $6.25x - 7.50 = 26.25$

C  $7.50x + 6.25 = 26.25$

D  $7.50x - 6.25 = 26.25$

2 请问与  $\frac{7}{12}$  的数值相等的精确小数是哪一个？

A 0.583

B  $0.58\bar{3}$

C 1.714

D  $1.71\bar{4}$

3 乔瑟夫在一家餐馆进食午餐的不含税价格是 \$13.00。他给服务员留下了这次午餐不含税价格的 17% 作为小费。在不计税的情况下，请问这顿午餐包含小费的总价是多少？

A \$2.21

B \$10.79

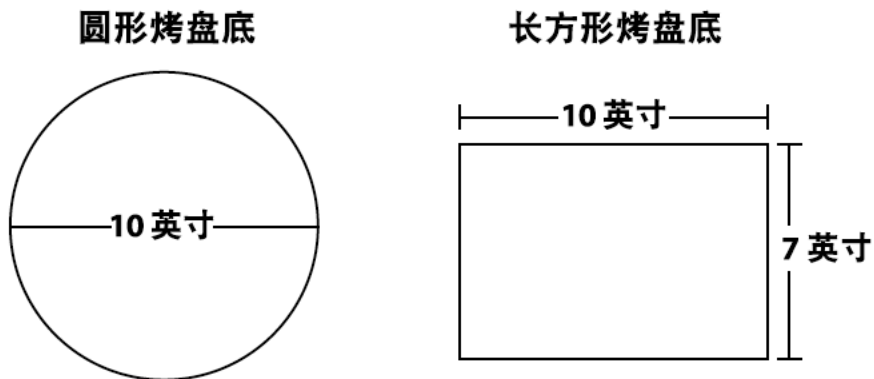
C \$13.17

D \$15.21

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4

乔丹正在烘焙布朗尼蛋糕，他将选取一个圆形或一个长方形的烤盘。每个烤盘的尺寸如下所示。



请问以下哪个陈述正确描述了圆形烤盘的底面积和长方形烤盘的底面积的大小关系？

- A 圆形烤盘的底面积比长方形烤盘的底面积要大约 8.5 平方英寸。
- B 圆形烤盘的底面积比长方形烤盘的底面积要大约 244.2 平方英寸。
- C 圆形烤盘的底面积比长方形烤盘的底面积要小约 7.2 平方英寸。
- D 圆形烤盘的底面积比长方形烤盘的底面积要小约 38.6 平方英寸。

5

肖恩特在  $\frac{2}{3}$  小时内平均能够饮用一杯 6 盎司水杯中水量的  $\frac{1}{2}$ 。请问她在一个小时内可以饮用多少水？

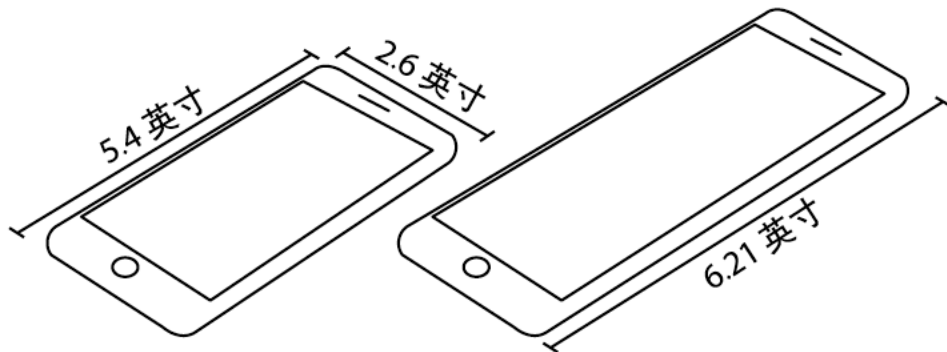
- A 0.75 盎司
- B 2 盎司
- C 4.5 盎司
- D 9 盎司

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- 6 请问下列表达式的数值是多少？

$$\frac{-(-4)(-6) - \frac{3}{5}(10 + 15)}{\frac{1}{3}}$$

- A -117  
B -13  
C 3  
D 27
- 7 下图是一部手机的长和宽，以及同一品牌手机的加大版的长度。



两部手机的长和宽是成比例的。请问加大版手机的宽是多少英寸？

- A 1.15  
B 2.26  
C 2.99  
D 3.41

续下页

8 从午夜 12:00 到凌晨 6:00，气温降低了  $12^{\circ}\text{C}$ 。如果原气温是  $12^{\circ}\text{C}$ ，以下哪个表达式可被用于代表上述情况？

- A  $12 - 12$
- B  $12 + 12$
- C  $12 - (-12)$
- D  $-12 + (-12)$

9 乔丹准备了 200 个姓名标签用于一场会议。每种颜色的姓名标签的数量如下所示。

- 35% 的姓名标签是蓝色的
- $\frac{3}{8}$  的姓名标签是黄色的
- 所有剩下的姓名标签是红色的

请问乔丹准备的红色姓名标签有多少个？

- A 55
- B 90
- C 110
- D 145

续下页

- 10 约翰逊老师的课后俱乐部中的男女生比率与格林老师的课后俱乐部中的男女生比率相同。约翰逊老师的俱乐部中有 4 名男生和 12 名女生。格林老师的俱乐部中有 6 名男生。请问格林老师的俱乐部中有多少名女生？

- A 2
- B 12
- C 14
- D 18

- 11 一件物品在商店中的原价是  $p$  美元。目前这件物品正在打八折销售。以下某些表达式展示了该物品当前的美元售价。

表达式 A:  $0.2p$

表达式 B:  $0.8p$

表达式 C:  $1 - 0.2p$

表达式 D:  $p - 0.2p$

表达式 E:  $p - 0.8p$

请问哪两个表达式代表了该物品的售价？

- A 表达式 A 和表达式 E
- B 表达式 B 和表达式 C
- C 表达式 B 和表达式 D
- D 表达式 C 和表达式 D

续下页

12

一家杂货店上周的苹果售价是每磅 \$1.60。这家杂货店本周的苹果正在打九折出售。

请问本周在这家杂货店中， $4\frac{1}{2}$  磅苹果的总价是多少？

A \$4.77

B \$6.48

C \$6.75

D \$6.93

13

一个物体沿着一条水平直线的路径匀速移动。该物体移动了该路径的  $\frac{1}{20}$ ，用时  $\frac{3}{4}$  秒。

请问按照这个速度，该物体走完整个路径需要花多少秒？

A 15

B  $15\frac{3}{4}$ 

C 20

D  $20\frac{3}{4}$ 

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第 7 页

一家家具店正在促销，其中一张沙发的促销价格比原价减少了  $\frac{1}{3}$ 。这张沙发的原价是 \$1,029.00。如果顾客能够支付现金，则可在促销价格上另外获得 5% 的折扣。在付款时，这张沙发的售价加上 6.5% 的销售税才是最终价格。请问当一名顾客支付现金时，这张沙发含销售税的总价是多少？

- A \$343.00
- B \$651.70
- C \$686.00
- D \$694.06

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15 请问以下哪个表格表示  $x$  和  $y$  是成比例的?

A

$x$	$y$
3	4
6	10
9	16
12	22
15	28

C

$x$	$y$
4	2
8	4
12	8
16	14
20	20

B

$x$	$y$
12	6
14	12
16	18
18	24
20	30

D

$x$	$y$
5	1
10	2
15	3
20	4
25	5

16 请问哪个表达式等于  $7a - 8 - 12a + 4$ ?

A  $-9a$

B  $31a$

C  $-5a - 4$

D  $19a + 12$

续下页



17

一个盒子里有三种不同大小的回形针。每种大小的回形针的数量如下所示。

- 100 个小号回形针
- 250 个中号回形针
- 150 个大号回形针

从盒子中随机选取一个回形针。请问这个回形针是小号或中号的概率是多少？

- A  $\frac{1}{3}$
- B  $\frac{2}{3}$
- C  $\frac{3}{7}$
- D  $\frac{7}{10}$

18

请求值： $\frac{1}{2}\%$  乘以  $\left[(-0.5) \times \left(-\frac{1}{4}\right)\right]$ ？

- A 0.000625
- B 0.00025
- C 0.065
- D 0.025

续下页

19

马里奥在他的鞋店里销售男士和女士鞋子。他还考虑销售童鞋。他随机选取了 120 名顾客参与一项调查。调查结果如下所示。

- 42 名顾客表示他们将购买童鞋
- 78 名顾客表示他们不会购买童鞋

马里奥每个月平均有 440 名顾客。请问根据调查结果，以下哪个数值能够**最好地**估计在一个普通月份中有多少顾客可能会购买童鞋？

- A 120
- B 154
- C 220
- D 286

20

丹妮尔使用一个长方形模具制作一幢大楼的比例模型。她的模型长 2 英寸，宽 1 英寸。这个模型的比例是 1 英寸 = 47 英尺。请问这幢大楼的实际底面积是多少平方英尺？

- A 141
- B 282
- C 2,209
- D 4,418

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21 请问哪个数值能够使得这个方程式成立？

$$-2.1 - \underline{\quad ? \quad} = -1\frac{1}{2}$$

- A 3.6
- B 0.6
- C -0.6
- D -3.6

22 曼尼去打保龄球。

- 他有 \$25.00 可以用。
- 他花了 \$4.25 租鞋。
- 他每玩一轮花费 \$2.50。

请问以下哪个不等式可以确定曼尼能够玩的最大轮次数量  $x$ ？

- A  $2.5 + 4.25x \geq 25$
- B  $4.25 + 2.5x \geq 25$
- C  $2.5 + 4.25x \leq 25$
- D  $4.25 + 2.5x \leq 25$

续下页

23

一名中学校长希望更改学校的午餐菜单。这名校长面向学生展开调查，以确定学生对这些变化的感受。请问哪种调查方法能够生成**最具**代表性的样本？

- A 调查乘车到校的学生，每次均调查第五个学生
- B 调查从每个教室中随机抽选的 3 名学生
- C 调查每次午餐期间抵达的第十名七年级的学生
- D 调查从每次艺术课、戏剧课和音乐课上随机抽选的 5 名同学

24

克里有一个装有白色和黄色弹珠的袋子。克里从袋中随机选取一个弹珠，并记录结果，再把这个弹珠放回袋里。以下展示了前 65 次选取的结果。

- 白色弹珠被选了 41 次。
- 黄色弹珠被选了 24 次。

根据这个结果，请问克里选取的下一个弹珠是白色的概率是什么（请四舍五入到最近的百分数）？

- A 41%
- B 50%
- C 59%
- D 63%

续下页

25 请问哪种情况会使得最终数值为零？

- A 当气温从  $-10^{\circ}\text{F}$  升至  $10^{\circ}\text{F}$  时的整体气温变化
- B 当某人花费 \$2.25 购买一件物品又以 \$2.25 售出时，该人员所赚取的总利润
- C 一个热气球从海平面上升至 21 公里后的整体海拔高度变化
- D 当某人骑车 3.1 英里后抵达学校，然后又骑车 3.1 英里回家后，他骑车的总距离

26 以下是一个方程式。

$$2(x - 9) = 9 \div \left(-\frac{1}{3}\right)$$

请问要使这个方程式成立， $x$  的数值是多少？

- A -9.0
- B -4.5
- C 3.0
- D 7.5

结束



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**7 年级**  
**数学测试**  
**第 1 部分**  
v202

**Grade 7**  
**Mathematics Test**  
**Session 1**  
v202

**THE STATE EDUCATION DEPARTMENT**  
**THE UNIVERSITY OF THE STATE OF NEW YORK / ALBANY, NY 12234**  
**2021 Mathematics Tests Map to the Standards**  
**Grade 7 Released Questions**

Question	Type	Key	Points	Standard	Cluster	Subscore	Secondary Standard(s)
<b>Session 1</b>							
1	Multiple Choice	A	1	CCSS.Math.Content.7.EE.B.4a	Expressions and Equations	Expressions and Equations	
2	Multiple Choice	B	1	CCSS.Math.Content.7.NS.A.2d	The Number System	The Number System	
3	Multiple Choice	D	1	CCSS.Math.Content.7.RP.A.3	Ratios and Proportional Relationships	Ratios and Proportional Relationships	
4	Multiple Choice	A	1	CCSS.Math.Content.7.G.B.4	Geometry		
5	Multiple Choice	C	1	CCSS.Math.Content.7.RP.A.1	Ratios and Proportional Relationships	Ratios and Proportional Relationships	
6	Multiple Choice	A	1	CCSS.Math.Content.7.NS.A.3	The Number System	The Number System	
7	Multiple Choice	C	1	CCSS.Math.Content.7.RP.A.2b	Ratios and Proportional Relationships	Ratios and Proportional Relationships	
8	Multiple Choice	A	1	CCSS.Math.Content.7.NS.A.1a	The Number System	The Number System	
9	Multiple Choice	A	1	CCSS.Math.Content.7.EE.B.3	Expressions and Equations	Expressions and Equations	
10	Multiple Choice	D	1	CCSS.Math.Content.7.RP.A.3	Ratios and Proportional Relationships	Ratios and Proportional Relationships	
11	Multiple Choice	C	1	CCSS.Math.Content.7.EE.A.2	Expressions and Equations	Expressions and Equations	
12	Multiple Choice	B	1	CCSS.Math.Content.7.NS.A.3	The Number System	The Number System	
13	Multiple Choice	A	1	CCSS.Math.Content.7.RP.A.1	Ratios and Proportional Relationships	Ratios and Proportional Relationships	
14	Multiple Choice	D	1	CCSS.Math.Content.7.RP.A.3	Ratios and Proportional Relationships	Ratios and Proportional Relationships	
15	Multiple Choice	D	1	CCSS.Math.Content.7.RP.A.2a	Ratios and Proportional Relationships	Ratios and Proportional Relationships	
16	Multiple Choice	C	1	CCSS.Math.Content.7.EE.A.1	Expressions and Equations	Expressions and Equations	
17	Multiple Choice	D	1	CCSS.Math.Content.7.SP.C.7b	Statistics and Probability		
18	Multiple Choice	A	1	CCSS.Math.Content.7.EE.B.3	Expressions and Equations	Expressions and Equations	
19	Multiple Choice	B	1	CCSS.Math.Content.7.SP.A.2	Statistics and Probability		
20	Multiple Choice	D	1	CCSS.Math.Content.7.G.A.1	Geometry		
21	Multiple Choice	C	1	CCSS.Math.Content.7.NS.A.1c	The Number System	The Number System	
22	Multiple Choice	D	1	CCSS.Math.Content.7.EE.B.4b	Expressions and Equations	Expressions and Equations	
23	Multiple Choice	B	1	CCSS.Math.Content.7.SP.A.1	Statistics and Probability		
24	Multiple Choice	D	1	CCSS.Math.Content.7.SP.C.6	Statistics and Probability		
25	Multiple Choice	B	1	CCSS.Math.Content.7.NS.A.1a	The Number System	The Number System	
26	Multiple Choice	B	1	CCSS.Math.Content.7.EE.B.3	Expressions and Equations	Expressions and Equations	

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.