New York NYSTP 2021 Grade 7 Math

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Grade 7 Mathematics Reference Sheet

CONVERSIONS

1 inch = 2.54 centimeters
1 meter = 39.37 inches
1 mile = 5,280 feet
1 mile = 1,760 yards
1 mile = 1.609 kilometers

1 kilometer = 0.62 mile
1 pound = 16 ounces
1 pound = 0.454 kilogram
1 kilogram = 2.2 pounds
1 ton = 2,000 pounds

1 cup = 8 fluid ounces
1 pint = 2 cups
1 quart = 2 pints
1 gallon = 4 quarts
1 gallon = 3.785 liters
1 liter = 0.264 gallon
1 liter = 1,000 cubic centimeters

FORMULAS

Triangle	$A = \frac{1}{2}bh$
Parallelogram	$A = bh$
Circle	$A = \pi r^2$
Circle	$C = \pi d$ or $C = 2\pi r$
General Prisms	$V = Bh$

Name: _____

New York State Testing Program

Mathematics Test
Session 1
Grade 7

v202

Released Questions

Session 1

TIPS FOR TAKING THE TEST

Here are some suggestions to help you do your best:

- Read each question carefully and think about the answer before making your choice.
- You have been provided with mathematics tools (a ruler, a protractor, and a calculator) and a reference sheet to use during the test. It is up to you to decide when each tool and the reference sheet will be helpful. You should use mathematics tools and the reference sheet whenever you think they will help you to answer the question.

1 Clara goes miniature golfing. She pays $\$7.50$ for an admission ticket and $\$6.25$ for each round she golfs. The total amount Clara pays for admission and the number of rounds she golfs is $\$26.25$. Which equation can be used to determine the number of rounds, x, that Clara golfs?

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 What is the exact decimal equivalent of $\frac{7}{12}$?

A 0.583

B $0.58\overline{3}$

C 1.714

D $1.71\overline{4}$

3 Joseph's lunch at a restaurant costs $\$13.00$, without tax. He leaves the waiter a tip of 17% of the cost of the lunch, without tax. What is the total cost of the lunch, including the tip, without tax?

A $\$2.21$

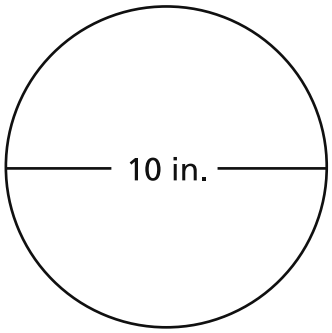
B $\$10.79$

C $\$13.17$

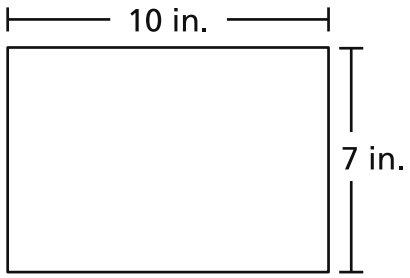
D $\$15.21$

4 Jordan is baking brownies and will choose to use either a round or a rectangular pan. The dimensions of the bottom of each pan are shown below.

BOTTOM OF ROUND PAN



BOTTOM OF RECTANGULAR PAN



Which statement correctly describes how the area of the bottom of the round pan compares to the area of the bottom of the rectangular pan?

A The area of the bottom of the round pan is greater than the area of the bottom of the rectangular pan by about 8.5 square inches.

B The area of the bottom of the round pan is greater than the area of the bottom of the rectangular pan by about 244.2 square inches.

C The area of the bottom of the round pan is less than the area of the bottom of the rectangular pan by about 7.2 square inches.

D The area of the bottom of the round pan is less than the area of the bottom of the rectangular pan by about 38.6 square inches.

5 On average, Shawnte drinks $\frac{1}{2}$ of a 6-ounce glass of water in $\frac{2}{3}$ hour. How much water does she drink in an hour?

A 0.75 ounce

B 2 ounces

C 4.5 ounces

D 9 ounces

6 What is the value of the expression shown below?

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

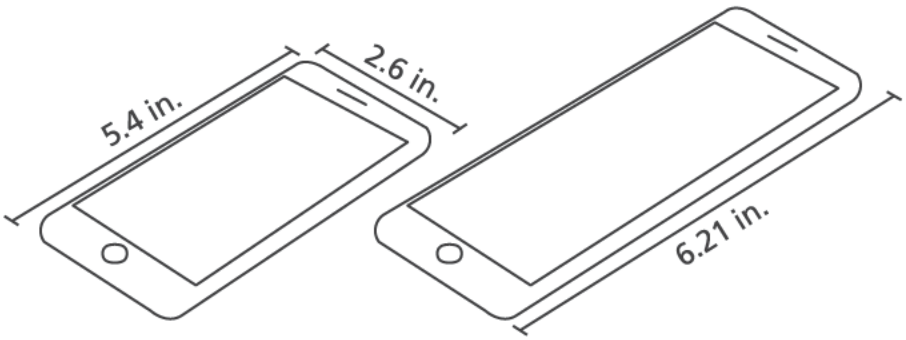
A -117

B -13

C 3

D 27

7 The diagram shows the length and width of a cell phone, and the length of a larger version of the same brand of cell phone.



The lengths and widths of the two cell phones are proportional. What is the width, in inches, of the larger version of the cell phone?

A 1.15

B 2.26

C 2.99

D 3.41

8 From $12{:}00$ midnight to $6{:}00$ a.m., the temperature decreased by 12°C. If the original temperature was 12°C, which expression can be used to represent this situation?

A $12 - 12$

B $12 + 12$

C $12 - (-12)$

D $-12 + (-12)$

9 Jordan prepares 200 name tags to use at a meeting. The number for each color of name tag is described below.

- 35% of the name tags are blue
- $\frac{3}{8}$ of the name tags are yellow
- all of the remaining name tags are red

How many of Jordan's name tags are red?

A 55

B 90

C 110

D 145

10 The ratio of boys to girls in Mr. Johnson's after-school club is the same as the ratio of boys to girls in Ms. Greene's after-school club. There are 4 boys and 12 girls in Mr. Johnson's club. There are 6 boys in Ms. Greene's club. How many girls are in Ms. Greene's club?

A 2

B 12

C 14

D 18

11 The regular price of an item at a store is p dollars. The item is on sale for 20% off the regular price. Some of the expressions shown below represent the sale price, in dollars, of the item.

Expression A: $0.2p$

Expression B: $0.8p$

Expression C: $1 - 0.2p$

Expression D: $p - 0.2p$

Expression E: $p - 0.8p$

Which two expressions each represent the sale price of the item?

A Expression A and Expression E

B Expression B and Expression C

C Expression B and Expression D

D Expression C and Expression D

12 Last week, the price of apples at a grocery store was $\$1.60$ per pound. This week, apples at the same grocery store are on sale at a 10% discount. What is the total price of $4\frac{1}{2}$ pounds of apples this week at the grocery store?

A $\$4.77$

B $\$6.48$

C $\$6.75$

D $\$6.93$

13 An object travels along a horizontal straight path at a constant rate. The object travels $\frac{1}{20}$ of the length of the path in $\frac{3}{4}$ second. At that rate, how many seconds does it take the object to travel the entire length of the path?

A 15

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

C 20

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

14 A furniture store has a sale during which the sale price of a sofa is $\frac{1}{3}$ off its original price. The original price of the sofa is $\$1{,}029.00$. A customer can get an additional 5% discount off the sale price for paying with cash. At checkout, a 6.5% sales tax on the final price is added to the cost of the sofa. What is the total cost of the sofa, including sales tax, for a customer paying with cash?

A $\$343.00$

B $\$651.70$

C $\$686.00$

D $\$694.06$

GO ON

15 Which table shows a proportional relationship between x and y?

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 Which expression is equivalent to $7a - 8 - 12a + 4$?

A $-9a$

B $31a$

C $-5a - 4$

D $19a + 12$

17 A box contains paper clips of three different sizes. The numbers of each size of paper clip are listed below.

- 100 small paper clips
- 250 medium paper clips
- 150 large paper clips

One paper clip is randomly selected from the box. What is the probability that the paper clip selected is either small or medium?

A $\frac{1}{3}$

B $\frac{2}{3}$

C $\frac{3}{7}$

D $\frac{7}{10}$

18 What is $\frac{1}{2}\%$ of $\left[(-0.5) \times \left(-\frac{1}{4}\right)\right]$?

A 0.000625

B 0.00025

C 0.065

D 0.025

GO ON

19 Mario sells men's and women's shoes in his shoe store. He is considering selling children's shoes. He randomly selected 120 customers to participate in a survey. The survey results are shown below.

- 42 customers said they would shop for children's shoes
- 78 customers said they would not shop for children's shoes

Mario has an average of 440 customers per month. Based on the survey results, which value is the **best** estimate of the number of customers that would shop for children's shoes during an average month?

A 120

B 154

C 220

D 286

20 Danielle constructs a scale model of a building with a rectangular base. Her model is 2 inches in length and 1 inch in width. The scale on the model is 1 inch = 47 feet. What is the actual area, in square feet, of the base of the building?

A 141

B 282

C 2,209

D 4,418

21 What value will make the equation true?

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

A 3.6

B 0.6

C -0.6

D -3.6

22 Manny goes bowling.

- He has $\$25.00$ to spend.
- He spends $\$4.25$ to rent shoes.
- He spends $\$2.50$ for each game he bowls.

Which inequality can Manny use to determine x, the greatest number of games he can bowl?

A $2.5 + 4.25x \geq 25$

B $4.25 + 2.5x \geq 25$

C $2.5 + 4.25x \leq 25$

D $4.25 + 2.5x \leq 25$

GO ON

23 A middle school principal wants to change the lunch menu at the school. The principal surveys the students to determine how the students would feel about the changes. Which survey method will produce the **best** representative sample?

A survey every fifth student who rides in a car to school

B survey 3 randomly selected students from every homeroom

C survey every tenth seventh-grade student during lunch

D survey 5 randomly selected students from every art, drama, and music class

24 Kerry has a bag containing white and yellow marbles. Kerry randomly selects one marble from the bag, records the result, and returns the marble to the bag. The results of the first 65 selections are shown below.

- A white marble was selected 41 times.
- A yellow marble was selected 24 times.

Based on these results, what is the probability that the next marble Kerry selects, rounded to the nearest percent, will be white?

A 41%

B 50%

C 59%

D 63%

25 Which situation results in a final value of zero?

A the overall change in temperature when the temperature goes from -10°F to 10°F

B the total profit made when a person buys an item for $\$2.25$ and then sells the item for $\$2.25$

C the overall change in altitude of a hot air balloon after rising 21 kilometers from sea level

D the total distance a person travels when he bikes 3.1 miles to school and then bikes 3.1 miles back home

26 An equation is shown below.

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

What value of x makes the equation true?

A -9.0

B -4.5

C 3.0

D 7.5

STOP

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)
Session 1							
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.