5 Full-Length STAAR Grade 8 Math Practice Tests

The Practice You Need to Ace the STAAR Math Test

2020

Reza Nazari & Ava Ross

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By

Reza Nazari & Ava Ross

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Description

5 Full-Length STAAR Grade 8 Math Practice Tests, which reflects the 2020 test guidelines and topics, is designed to help you hone your math skills, overcome your exam anxiety, and boost your confidence -- and do your best to ace the STAAR Math Test. The realistic and full-length STAAR Math tests, which reflect the format and question types on the STAAR, show you how the test is structured and what math topics you need to master. The practice test questions are followed by answer explanations to help you find your weak areas, learn from your mistakes, and raise your STAAR Math score.

The surest way to succeed on STAAR Math Test is with intensive practice in every math topic tested-- and that's what you will get in ***5 Full-Length STAAR Grade 8 Math Practice Tests***. This STAAR Math new edition has been updated to replicate questions appearing on the most recent STAAR Math tests. This is a precious learning tool for STAAR Math test takers who need extra practice in math to improve their STAAR Math score. After taking the STAAR Math practice tests in this book, you will have solid foundation and adequate practice that is necessary to succeed on the STAAR Grade 8 Math test. **This book is your ticket to ace the STAAR Math Test!**

5 Full-Length STAAR Grade 8 Math Practice Tests contains many exciting and unique features to help you improve your test scores, including:

- Content 100% aligned with the 2020 STAAR test
- Written by STAAR Math tutors and test experts
- Complete coverage of all STAAR Math concepts and topics which you will be tested
- Detailed answers and explanations for every STAAR Math practice questions to help you learn from your mistakes
- 5 full-length practice tests (featuring new question types) with detailed answers

This STAAR Math book and other Effortless Math Education books are used by thousands of students each year to help them review core content areas, brush-up in math, discover their strengths and weaknesses, and achieve their best scores on the STAAR test.

About the Author

Reza Nazari is the author of more than 100 Math learning books including:
– Math and Critical Thinking Challenges: For the Middle and High School Student
– STAAR Math in 30 Days
– ASVAB Math Workbook 2018 - 2019
– Effortless Math Education Workbooks
– and many more Mathematics books …

Reza is also an experienced Math instructor and a test–prep expert who has been tutoring students since 2008. Reza is the founder of Effortless Math Education, a tutoring company that has helped many students raise their standardized test scores—and attend the colleges of their dreams. Reza provides an individualized custom learning plan and the personalized attention that makes a difference in how students view math.

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Contents

Description 4

STAAR Test Review 7

STAAR Mathematics Practice Test 1 10

STAAR Mathematics Practice Test 2 19

STAAR Mathematics Practice Test 3 29

STAAR Mathematics Practice Test 4 39

STAAR Mathematics Practice Test 5 49

STAAR Mathematics Practice Tests Answer Keys 60

How to score your test 64

STAAR Mathematics Practice Tests Answers and Explanations 67

STAAR Test Review

The State of Texas Assessments of Academic Readiness (STAAR) is developed under the supervision of the Texas Education Agency and is taken by all public school students in Texas, grades 3–12. The tests measure the progress of students from 3rd grade to 8th grade, as well as high school. STAAR is the state's testing program and is based on state curriculum standards in core subjects including:

- Reading,
- Writing,
- Mathematics,
- Science,
- Social Studies

In high school, students take end-of-course STAAR exams in five high school subjects:

- Algebra I,
- Biology,
- English I,
- English II,
- U.S. History.

Students take STAAR tests in the spring. The number of tests a student takes each year will depend on what grade he or she is in. Most students will have two to four testing days during a school year.

In this book, there are five complete Grade 8 STAAR Math Tests. Take these tests to see what score you'll be able to receive on a real STAAR Math test.

Good luck!

Time to refine your skill with a practice examination

Take a practice STAAR Math Test to simulate the test day experience. After you've finished, score your test using the answer key.

Before You Start

- You'll need a pencil and a calculator to take the test.
- There are two types of questions:

  Multiple choice questions: for each of these questions, there are four or more possible answers. Choose which one is best.

  Grid-ins questions: for these questions, write your answer in the box provided.
- It's okay to guess. You won't lose any points if you're wrong.
- The STAAR Mathematics test contains a formula sheet, which displays formulas relating to geometric measurement and certain algebra concepts. Formulas are provided to test-takers so that they may focus on application, rather than the memorization, of formulas.
- After you've finished the test, review the answer key to see where you went wrong and what areas you need to improve.

Good luck!

STAAR Mathematics Practice Test 1

2020

Grade 8

Total number of questions: 40

Total time to complete the test: No time limit

You may use a calculator on this practice test.

STAAR Grade 8 Mathematics Formula Sheet

LINEAR EQUATIONS	
Slope – intercept form	$y = mx + b$
Direct Variation	$y = kx$
Slope of a Line	$m = \frac{y_2 - y_1}{x_2 - x_1}$

CIRCUMFERENCE	
Circle	$C = 2\pi r$ or $C = \pi d$

AREA	
Triangle	$A = \frac{1}{2}bh$
Parallelogram	$A = bh$
Trapezoid	$A = \frac{1}{2}h(b_1 + b_2)$
Circle	$A = \pi r^2$

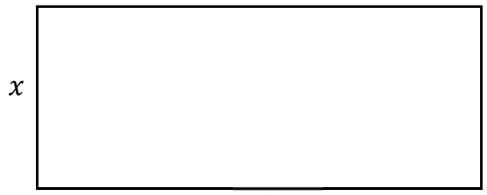
SURFACE AREA		
	Lateral	Total
Prism	$S = Ph$	$S = Ph + 2B$
Cylinder	$S = 2\pi rh$	$S = 2\pi rh + 2\pi r^2$

VOLUME	
Prism or Cylinder	$V = Bh$
Pyramid or Cone	$V = \frac{1}{3}Bh$
Sphere	$V = \frac{4}{3}\pi r^3$

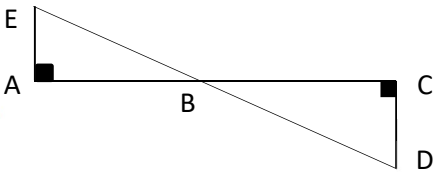
ADDITIONAL INFORMATION	
Pythagorean theorem	$a^2 + b^2 = c^2$
Simple interest	$I = prt$
Compound Interest	$A = p(1 + r)^t$

1) In the rectangle below if $y > 5$ cm and the area of rectangle is 50 cm2 and the perimeter of the rectangle is 30 cm, what is the value of x and y respectively?

☐A. 4, 11
☐B. 5, 11
☐C. 5, 10
☐D. 4, 10



2) What is the length of AB in the following figure if $AE = 4$, $CD = 6$, and $AC = 12$?



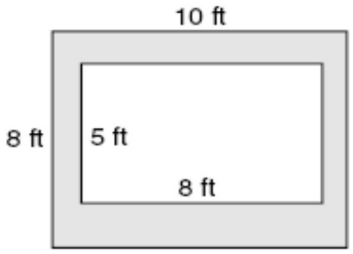
☐A. 3.8
☐B. 7.2
☐C. 4.8
☐D. 24

3) If a gas tank can hold 25 gallons, how many gallons does it contain when it is $\frac{2}{5}$ full?

☐A. 50
☐B. 62.5
☐C. 125
☐D. 10

4) What is the area of the shaded region?

☐A. $31\ ft$
☐B. $64\ ft$
☐C. $40\ ft$
☐D. $80\ ft$



5) What is the value of this expression? $[3 \times (-14) - 48] - (-14) + [3 \times 8] \div 2$

Write your answer in the box below.

6) What is the product of all possible values of x in the following equation?

$$|2x - 6| = 12$$

☐A. -27
☐B. -3
☐C. 9
☐D. 27

7) What is the slope of a line that is perpendicular to the line $3x - y = 6$?

☐A. -3 ☐B. $-\frac{1}{3}$

☐C. 2 ☐D. 6

8) What is the value of the expression $3(x - 2y) + (2 - x)^2$ when $x = 5$ and $y = -3$?

☐A. -22 ☐B. 24

☐C. 42 ☐D. 88

9) If $x - 4(x + 2) = -15.5$, what is the value of x?

Write your answer in the box below.

10) Which of the following answers represents the compound inequality $-4 \leq 4x - 8 < 16$?

☐A. $-2 \leq x \leq 8$ ☐B. $-2 < x \leq 8$

☐C. $1 < x \leq 6$ ☐D. $1 \leq x < 6$

11) Simplify the expression.

$$(6x^3 - 8x^2 + 2x^4) - (4x^2 - 2x^4 + 2x^3)$$

☐A. $4x^4 + 4x^3 - 12x^2$ ☐B. $4x^3 - 12x^2$

☐C. $4x^4 + 4x^3 + 12x^2$ ☐D. $8x^3 - 12x^2$

12) In two successive years, the population of a town is increased by 15% and 20%. What percent of the population is increased after two years?

☐A. 32% ☐B. 35%

☐C. 38% ☐D. 68%

13) Last week $24{,}000$ fans attended a football match. This week three times as many bought tickets, but one sixth of them cancelled their tickets. How many are attending this week?

☐A. $48{,}000$ ☐B. $54{,}000$

☐C. $60{,}000$ ☐D. $72{,}000$

14) What is the perimeter of a square in centimeters that has an area of $595.36\ cm^2$?

Write your answer in the box below. (don't write the measurement)

15) The mean of 50 test scores was calculated as 88. But, it turned out that one of the scores was misread as 94 but it was 69. What is the correct mean of the test scores?

☐A. 85 ☐B. 87

☐C. 87.5 ☐D. 88.5

16) Two dice are thrown simultaneously, what is the probability of getting a sum of 5 or 8?

☐A. $\frac{1}{3}$ ☐B. $\frac{1}{4}$

☐C. $\frac{1}{16}$ ☐D. $\frac{11}{36}$

17) A swimming pool holds $2{,}000$ cubic feet of water. The swimming pool is 25 feet long and 10 feet wide. How deep is the swimming pool?

Write your answer in the box below. (Don't write the measurement)

18) Mr. Carlos family are choosing a menu for their reception. They have 3 choices of appetizers, 5 choices of entrees, 4 choices of cake. How many different menu combinations are possible for them to choose?

☐A. 12 ☐B. 32

☐C. 60 ☐D. 120

19) In a stadium the ratio of home fans to visiting fans in a crowd is $5:7$. Which of the following could be the total number of fans in the stadium?

☐A. $12{,}324$
☐C. $44{,}566$
☐B. $42{,}326$
☐D. $66{,}812$

20) What is the area of a square whose diagonal is 8?

☐A. 16
☐B. 32
☐C. 36
☐D. 64

21) Anita's trick–or–treat bag contains 12 pieces of chocolate, 18 suckers, 18 pieces of gum, 24 pieces of licorice. If she randomly pulls a piece of candy from her bag, what is the probability of her pulling out a piece of sucker?

☐A. $\frac{1}{3}$
☐B. $\frac{1}{4}$
☐C. $\frac{1}{6}$
☐D. $\frac{1}{12}$

22) The perimeter of a rectangular yard is 60 meters. What is its length if its width is twice its length?

☐A. 10 meters
☐B. 18 meters
☐C. 20 meters
☐D. 24 meters

23) The average of 6 numbers is 12. The average of 4 of those numbers is 10. What is the average of the other two numbers.

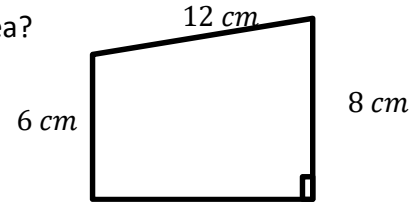
☐A. 10
☐B. 12
☐C. 14
☐D. 16

24) What is the value of x in the following system of equations?

$$2x + 5y = 11$$
$$4x - 2y = -14$$

☐A. -1
☐B. 1
☐C. -2
☐D. 4

25) The perimeter of the trapezoid below is $36\ cm$. What is its area?



☐A. $576\ cm^2$ ☐B. $70\ cm^2$

☐C. $48\ cm^2$ ☐D. $24\ cm^2$

26) A card is drawn at random from a standard 52–card deck, what is the probability that the card is of Hearts? (The deck includes 13 of each suit clubs, diamonds, hearts, and spades)

☐A. $\frac{1}{3}$ ☐B. $\frac{1}{4}$

☐C. $\frac{1}{6}$ ☐D. $\frac{1}{52}$

27) The average of five numbers is 25. If a sixth number that is greater than 42 is added, then, which of the following could be the new average?

☐A. 25 ☐C. 27

☐B. 26 ☐D. 28

28) The diagonal of a rectangle is 10 inches long and the height of the rectangle is 8 inches. What is the perimeter of the rectangle in inches?

Write your answer in the box below.

29) The ratio of boys and girls in a class is $4:7$. If there are 44 students in the class, how many more boys should be enrolled to make the ratio $1:1$?

☐A. 8 ☐B. 10

☐C. 12 ☐D. 14

30) Mr. Jones saves $\$2{,}500$ out of his monthly family income of $\$55{,}000$. What fractional part of his income does he save?

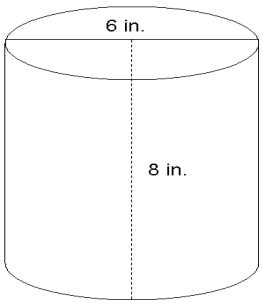
☐A. $\frac{1}{22}$ ☐B. $\frac{1}{11}$

☐C. $\frac{3}{25}$ ☐D. $\frac{2}{15}$

31) Jason needs an 75% average in his writing class to pass. On his first 4 exams, he earned scores of $68\%, 72\%, 85\%$, and 90%. What is the minimum score Jason can earn on his fifth and final test to pass?

Write your answer in the box below.





32) What is the value of x in the following equation? $\frac{2}{3}x + \frac{1}{6} = \frac{1}{3}$

☐A. 6 ☐B. $\frac{1}{2}$

☐C. $\frac{1}{3}$ ☐D. $\frac{1}{4}$

33) A bank is offering 3.5% simple interest on a savings account. If you deposit $\$12{,}000$, how much interest will you earn in two years?

☐A. $\$420$ ☐B. $\$840$

☐C. $\$4200$ ☐D. $\$8{,}400$

34) Simplify $6x^2y^3(2x^2y)^3 =$

☐A. $12x^4y^6$ ☐B. $12x^8y^6$

☐C. $48x^4y^6$ ☐D. $48x^8y^6$

35) What is the surface area of the cylinder below?

☐A. $48\ \pi\ in^2$ ☐B. $57\ \pi\ in^2$

☐C. $66\ \pi\ in^2$ ☐D. $288\ \pi\ in^2$

36) A cruise line ship left Port A and traveled 80 miles due west and then 150 miles due north. At this point, what is the shortest distance from the cruise to port A in miles?

Write your answer in the box below.



37) What is the equivalent temperature of $104°F$ in Celsius? $C = \frac{5}{9}(F - 32)$

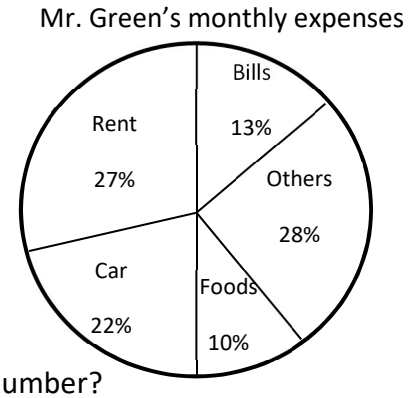
☐A. 32 ☐B. 40

☐C. 48 ☐D. 52

38) The circle graph below shows all Mr. Green's expenses for last month. If he spent $\$660$ on his car, how much did he spend for his rent?

☐A. $\$700$ ☐B. $\$740$

☐C. $\$780$ ☐D. $\$810$



39) If 150% of a number is 75, then what is the 90% of that number?

☐A. 45 ☐B. 50

☐C. 70 ☐D.85

40) A football team had $\$20{,}000$ to spend on supplies. The team spent $\$14{,}000$ on new balls. New sport shoes cost $\$120$ each. Which of the following inequalities represent the number of new shoes the team can purchase.

☐A. $120x + 14{,}000 \leq 20{,}000$ ☐B. $120x + 14{,}000 \geq 20{,}000$

☐C. $14{,}000x + 120 \leq 20{,}000$ ☐D. $14{,}000x + 12{,}0 \geq 20{,}000$

End of STAAR Mathematics Practice Test 1.

STAAR Mathematics Practice Test 2

2020

Grade 8

Total number of questions: 40

Total time to complete the test: No time limit

You may use a calculator on this practice test.