

Grade 8 Mathematics Mock Test

The Mock Test resources included are similar to what a child might experience on the NAEP Test. On the NAEP, students will have two 25 minute tests (similar to Mock Test A and Mock Test B). They will take one test for a total of 25 minutes, then take a short break, and then take the other test for a total of 25 minutes. The items on the NAEP are balanced according to complexity: low, moderate, and high. The items are divided into multiple choice (50%), and short answer and extended constructed response questions (50%) according to time. The grade 8 Mock Test A and B have been designed to simulate the NAEP test and include 12 multiple choice, 2 short answer, and 1 extended constructed response questions.

The purpose of the Mock Tests is to assess what students know and to assist in preparing them for state assessments. Performance on the Mock test is more than just getting the answer correct. It will allow you to gather evidence of student learning and misconceptions as well as an opportunity to adjust your instruction accordingly.

Each Mock Test for the eighth grade is based on the standards from the five domains of the Alabama Course of Study (ALCOS). The five domains are listed below.

- The Number System
- Expressions and Equations
- Functions
- Geometry
- Statistics and Probability

Test Sessions

Each of the Mock Test resources include an answer key and rationales for each test item. Sample rubrics are provided for the short answer and extended constructed response questions on a two and three point scale.

Normally the test are administered in two 25 minute consecutive sessions with a break in between. However, you may administer the test in the manner that works for your students. (i.e.... take Mock Test A today, and Mock Test B tomorrow, or break up the test to administer and provide feedback for a couple of questions per day, etc.....)

Students may write on the test. They should be very specific in their explanations and clear and legible in their recording of responses. No grade should be given for the test. It should be used to formatively assess and make adjustments for students in preparation for future testing. A key part of the process for advancing student thinking, is to debrief the Mock Test and provide specific feedback on the student thinking and performance.

References and links are provided for each of the resources and appear as a footnote at the bottom of each page.

Name _____

Date _____

1. Evaluate: $(2.4 \times 10^4)(4.5 \times 10^3)$
- 1.08×10^7
 - 1.08×10^8
 - 1.08×10^{12}
 - 1.08×10^{13}
2. What is the solution to the equation below?
 $2(x - 3) = 2x + 5$
- $x = 2\frac{3}{4}$
 - $x = -2\frac{3}{4}$
 - There is no solution.
 - There are infinitely many solutions.

3. The four tables below show relationships in which the x values represent inputs and the y values represent the corresponding outputs.

Q	
x	y
-2	-3
1	3
3	-3
5	3

R	
x	y
-1	-5
2	4
3	7
4	10

S	
x	y
-2	3
1	3
3	3
5	3

T	
x	y
3	4
4	5
3	-4
4	-5

Which table represents a relationship that is **not** a function?

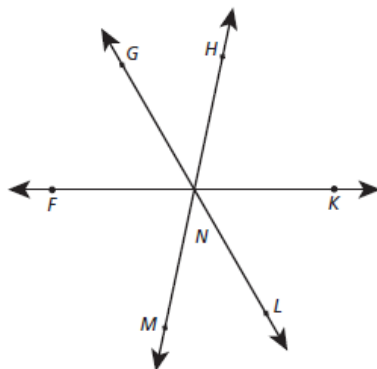
- Q
- R
- S
- T

- <https://www.engageny.org/resource/new-york-state-common-core-sample-questions>, From EngageNY.org of the New York State Education Department. New York State Testing Program Grade 8 Common Core Mathematics Test, Released Questions with Annotations. Internet. Available from 2013, 2014, 2015 grade_8_math_released_questions.pdf on EngageNY.org; accessed 2^h November, 2016. (CC BY-NC-SA 3.0) http://creativecommons.org/licenses/by-nc-sa/3.0/deed.en_US
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- https://www.smarterbalanced.org/wp-content/uploads/2015/11/G8_Practice_Test_Scoring_Guide_Math.pdf, © Smarter Balanced Assessment Consortium, 2013 Descriptions of the operation of the Test Delivery System, Test Information Distribution Engine, and related systems are property of the American Institutes for Research® (AIR) and are used with permission of AIR.
- https://parcc.pearson.com/resources/Practice-Tests/TBAD/Gr8Math/PC1105803_Gr8MTB_PT.pdf, Partnership for Assessment of Readiness for College and Careers-Fifth Edition (2016). PARCC Accessibility Features and Accommodations Manual 2016-2017. Parcc Inc. Washington, DC: PARCC Assessment Consortia.

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4. In the diagram below, three lines intersect at N . The measure of $\angle GNF$ is 60° , and the measure of $\angle MNL$ is 47° .



What is the measure of $\angle HNK$?

- 47°
 - 60°
 - 73°
 - 107°
5. Rectangle R undergoes a dilation with scale factor 0.5 and then a reflection over the y -axis. The resulting image is Rectangle S . Which statement about Rectangles R and S is true?
- They are congruent and similar.
 - They are similar but not congruent.
 - They are congruent but not similar.
 - They are neither congruent nor similar.
6. Madison created two functions.
For Function A, the value of y is two less than four times the value of x .
The table below represents Function B.

Function B

x	y
-3	-9
-1	-5
1	-1
3	3

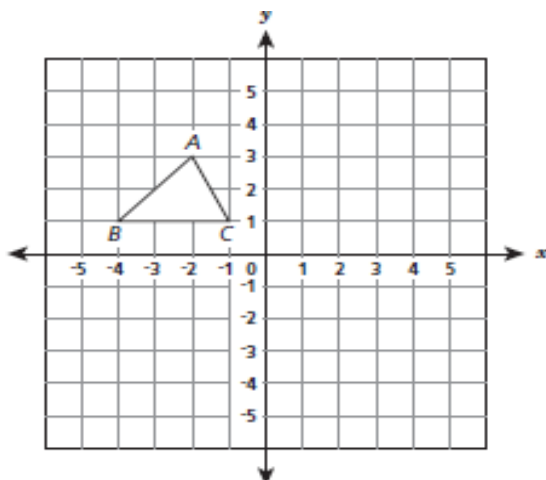
In comparing the rates of change, which statement about Function A and Function B is true?

- Function A and Function B have the same rate of change.
 - Function A has a greater rate of change than Function B has.
 - Function A and Function B both have negative rates of change.
 - Function A has a negative rate of change and Function B has a positive rate of change.
- <https://www.engageny.org/resource/new-york-state-common-core-sample-questions>, From EngageNY.org of the New York State Education Department. New York State Testing Program Grade 8 Common Core Mathematics Test, Released Questions with Annotations. Internet. Available from 2013, 2014, 2015 grade_8_math_released_questions.pdf on EngageNY.org; accessed 2^h November, 2016. (CC BY-NC-SA 3.0) http://creativecommons.org/licenses/by-nc-sa/3.0/deed.en_US
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7. If $\triangle ABC$ is rotated 90° clockwise about the origin, what will be the new coordinates of vertex B ?



- a. $(-1, -4)$
 b. $(1, 4)$
 c. $(4, 1)$
 d. $(4, -1)$
8. Jenny wants to rent a truck for one day. She contacted two companies. Laguna's Truck Rentals charges \$20 plus \$2 per mile. Salvatori's Truck Rentals charges \$3 per mile. After how many miles will the total cost for both companies be the same?
- a. 4
 b. 6
 c. 20
 d. 60
9. An owner of a small store knows that in the last week 54 customers paid with cash, 42 paid with a debit card, and 153 paid with a credit card. Based on the number of customers from last week, which fraction is closest to the probability that the next customer will pay with cash?
- a. $\frac{1}{5}$
 b. $\frac{1}{4}$
 c. $\frac{1}{3}$
 d. $\frac{1}{2}$

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10. A cereal company puts a colored ring in each box of cereal. There are 6 different ring colors. The colors of the rings in each of 50 cereal boxes are shown in the table below.

RING COLORS IN CEREAL BOXES

Color	Number of Rings
Red	7
Blue	15
Green	8
Purple	10
Yellow	5
Orange	5

Based on the data, what is the probability that the next cereal box will contain a blue or a yellow ring?

- a. $\frac{1}{6}$
 b. $\frac{2}{5}$
 c. $\frac{3}{5}$
 d. $\frac{2}{3}$

11. What is the decimal equivalent of $\frac{5}{6}$?

- a. 0.083
 b. 0.83
 c. $0.8\bar{3}$
 d. $0.08\bar{3}$

12. Which number is irrational?

- a. $\sqrt{64}$
 b. $\frac{1}{2}$
 c. $\frac{\sqrt{16}}{4}$
 d. $\frac{\sqrt{20}}{5}$

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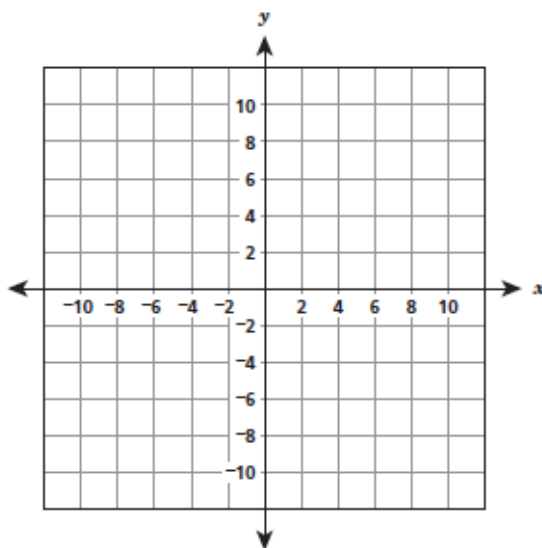
13. Select **all** the equations that can be represented by a straight line when graphed on the coordinate plane.

- $\frac{1}{x} + y = 9$
- $x = 16 + 3y$
- $x = -2y^2 + 7$
- $8x - 5y = 30$
- $y = -6(x + 10)$
- $y = x(3 - x) + 1$

14. Graph and label the given system of equations on the coordinate grid shown below.

$$y = \frac{1}{2}x + 2$$

$$y = x - 1$$



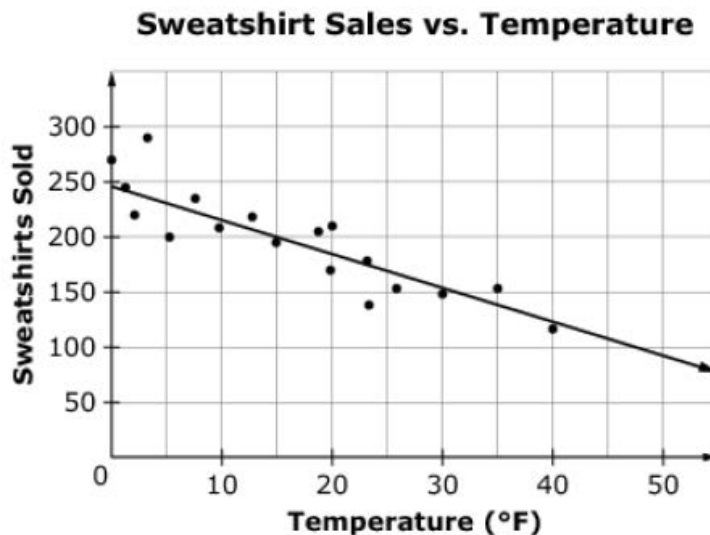
What is the solution to the system of equation?

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15. This scatter plot shows the relationship between the number of sweatshirts sold and the temperature outside.



The y -intercept of the estimated line of best fit is at $(0, b)$. Enter the approximate value of the b in the first response box.

Enter the approximate slope of the estimated line of best fit in the second response box.

y -intercept

slope

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