Georgia CRCT-M

Criterion-Referenced Competency Tests — Modified

Sample Items

Grade 8

MATHEMATICS

GEORGIA
DEPARTMENT OF
EDUCATION
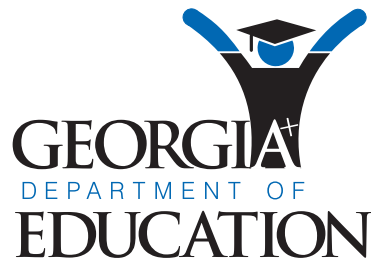
Original CRCT

Grade 8 Items
MATHEMATICS

MATHEMATICS

1. Mark has $100 in his wallet to buy video games that cost $18 each. Mark's cousin gave him $10. Mark puts this money in his wallet. If b is the number of video games, which inequality represents this situation?

   * A. $18b \leq 110$

      B. $18b \geq 110$

      C. $18b + 18 \geq 110$

      D. $18b - 18 \leq 110$

2. What is the slope of the line through (-2, 5) and (3, 7)?

      A. $-\dfrac{2}{5}$

      B. $-\dfrac{5}{12}$

   * C. $\dfrac{2}{5}$

      D. $\dfrac{5}{12}$

3. Mrs. Fox spent $10 when she bought a total of 20 glazed donuts and 40 jelly donuts at the bakery last week. This week, Mrs. Fox returned to the bakery and spent $8 more on 20 glazed donuts and 20 jelly donuts. How much did 1 jelly donut cost?

      A. $0.10

   * B. $0.20

      C. $0.30

      D. $0.60

4. Look at the set of numbers.

   $$\{0.17, \tfrac{1}{3}, \sqrt{8}, 2\}$$

   How many numbers in this set are irrational?

   * A. 1

      B. 2

      C. 3

      D. 4

5. A number is randomly selected from the following integers:

   13, 7, 15, 22, 19, 5, 14, 21, 27, 18

   What is the probability that the selected number is greater than 20?

   * A. $\dfrac{3}{10}$

      B. $\dfrac{4}{10}$

      C. $\dfrac{5}{10}$

      D. $\dfrac{6}{10}$

Grade 8 Items

MATHEMATICS

MATHEMATICS

1. Mark wants to buy some video games.

   - He has $50 in his wallet.
   - The games cost $10 each.

   Which **inequality** shows the number of video games, v, Mark can buy?

   A. $10v \leq 50$

   B. $10v \geq 50$

   C. $10v - 50 \geq 0$

   D. $10v + 50 \leq 0$

2. What is the **slope** of the line through (-2, 5) and (3, 7)?

   A. $-\dfrac{2}{5}$

   B. $-\dfrac{5}{12}$

   C. $\dfrac{2}{5}$

   D. $\dfrac{5}{12}$

   > **Helpful Hint**
   >
   > slope $= \dfrac{y_2 - y_1}{x_2 - x_1}$

3. Mrs. Fox bought breakfast for the teachers for the last two weeks.

   - Last week, Mrs. Fox bought 10 glazed donuts and 20 jelly donuts for $6.
   - This week, Mrs. Fox bought 10 glazed donuts and 10 jelly donuts for $4.

How much did 1 jelly donut cost?

   A. $0.10

   B. $0.20

   C. $0.30

   D. $0.60

> **Helpful Hint**
> This is a multi-step problem. Set up each statement as an equation.

4. Look at the set of numbers.

$$\{0.17, \frac{1}{3}, \sqrt{8}, 2\}$$

How many numbers in this set are **irrational**?

   A. 1

   B. 2

   C. 3

   D. 4

5.   A number is randomly selected from the following integers:

5, 7, 13, 14, 15, 18, 19, 21, 22, 27

What is the **probability** that the selected number is greater than 20?

A. $\dfrac{3}{10}$

B. $\dfrac{4}{10}$

C. $\dfrac{5}{10}$

D. $\dfrac{6}{10}$

Item Sequence	Georgia Performance Standard	KEY
1	**Domain: Algebra** **M8A2.** Students will understand and graph inequalities in one variable. a. Represent a given situation using an inequality in one variable.	A
2	**Domain: Algebra** **M8A4.** Students will graph and analyze graphs of linear equations and inequalities. a. Interpret slope as a rate of change.	C
3	**Domain: Algebra** **M8A5.** Students will understand systems of linear equations and inequalities and use them to solve problems. d. Interpret solutions in problem contexts.	B
4	**Domain: Number & Operations** **M8N1.** Students will understand different representations of numbers including square roots, exponents, and scientific notation. h. Distinguish between rational and irrational numbers.	A
5	**Domain: Data Analysis & Probability** **M8D3.** Students will use the basic laws of probability. a. Find the probability of simple independent events.	A

Item Sequence	Commentary
All	• The font size has been increased. • The line spacing between items has been increased.
1	• The text and numbers were simplified to reduce cognitive load. • A bulleted list was applied to help the student focus on key information needed to answer the question. • A key term was boldfaced to help the student focus on the concept that the item was designed to assess. • The extra step of the original problem, adding in the amount of money that Mark received from his cousin to the amount of money that was already in Mark's wallet, was eliminated.
2	• A key term was boldfaced to help the student focus on the concept that the item was designed to assess. • A hint box was added so the student is only assessed on the ability to apply the formula.
3	• A hint box was added to make the student mindful that more than one step is needed to solve problem. • The text and numbers were simplified to reduce cognitive load. • A bulleted list was applied to help the student focus on the information needed to solve the problem.
4	A key term was boldfaced to help the student focus on the concept that the item was designed to assess.
5	• A key term was boldfaced to help the student focus on the concept that the item was designed to assess. • The sequence of the integers was arranged in order from least to greatest. The step of organizing the data was eliminated so the student could focus on the concept of probability.