



# Grade 8 Mathematics

## Answer Key



*This booklet contains the answers to the sample items from the National Assessment of Educational Progress (NAEP) included in the NAEP Grade 8 Mathematics Sample Questions Booklet. It also references the corresponding Grade 8 Mathematics Common Core State Standards. Additional NAEP items can be accessed at [www.nces.ed.gov/nationsreportcard/itmrls](http://www.nces.ed.gov/nationsreportcard/itmrls).*

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics (NCES), National Assessment of Educational Progress (NAEP).

This answer booklet and the corresponding Grade 8 Mathematics Sample Questions Booklet are posted at <http://www.fldoe.org/asp/naep/naep-pt.asp>.

# NAEP GRADE 8 MATHEMATICS ANSWER KEY

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**Mathematics Common Core (MACC) State Standards (CCSS) Domains**

- |  |  |
|--|--|
| EE = Expressions and Equations             | F = Functions                          |
| G = Geometry                               | MD = Measurement and Data              |
| NBT = Number and Operations in Base Ten    | NF = Number and Operations Fractions   |
| NS = Number Systems                        | OA = Operations and Algebraic Thinking |
| RP = Ratios and Proportional Relationships | SP = Statistics and Probability        |

## NAEP GRADE 8 MATHEMATICS

### Alignment to Mathematics Common Core (MACC) State Standards (CCSS) and Answers to NAEP Sample Questions

#### NAEP Grade 8 Number Properties and Operations

##### Question 1, MACC.5.NBT.1.3

**Description:** Translate from words to numbers

**Difficulty:** Easy

**Complexity:** Low

Correct answer is **D**

Answers	Percent chosen by Florida's participating students
*D	59%
A	1%
B	8%
C	11%
E	21%

##### Question 2, MACC.6.EE.1.2

**Description:** Identify expression that represents odd integer

**Difficulty:** Medium

**Complexity:** Low

Correct answer is **C**

Answers	Percent chosen by Florida's participating students
*C	38%
A	20%
B	5%
D	25%
E	11%

### Question 3, MACC.5.NF.1.2 and MACC.5.NF.2.4

**Description:** Use measuring cups to describe a fraction

**Difficulty:** Easy

**Complexity:** Low

Correct answer is **C**

Answers	Percent chosen by Florida's participating students
*C	76%
A	3%
B	6%
D	8%
E	6%

### Question 4, MACC.6.NS.2.2 and MACC.6.NS.2.3

**Description:** Find wages earned

**Difficulty:** Easy

**Complexity:** Moderate

Correct Answer is **D**

Answers	Percent chosen by Florida's participating students
*D	67%
A	6%
B	6%
C	13%
E	7%

### Question 5, MACC.4.OA.2.4

**Description:** Recognize a counterexample about prime numbers

**Difficulty:** Medium

**Complexity:** Moderate

Correct answer is **A**

Answers	Percent chosen by Florida's participating students
*A	42%
B	5%
C	7%
D	25%
E	21%

**Question 6, MACC.4.NBT.2.4**

**Description:** Use estimation to find a difference

**Difficulty:** Easy

**Complexity:** Low

Correct answer is **B**

Answers	Percent chosen by Florida's participating students
*B	82%
A	4%
C	4%
D	8%

**Question 7, MACC.3.NF.1.3**

**Description:** Identify pictorial representation of equivalent fractions

**Difficulty:** Easy

**Complexity:** Low

Correct answer is **A**

Answers	Percent chosen by Florida's participating students
*A	70%
B	10%
C	6%
D	13%

**Question 8, MACC.7.NS.1.1 and MACC.7.NS.1.2**

**Description:** Identify operation resulting from odd integer

**Difficulty:** Hard

**Complexity:** Low

Correct answer is **A**

Answers	Percent chosen by Florida's participating students
*A	35%
B	15%
C	13%
D	18%
E	18%

**Question 9, MACC.6.RP.1.3**

**Description:** Determine a quantity based on given percent

**Difficulty:** Easy

**Complexity:** Low

Correct answer is **B**

Answers	Percent chosen by Florida's participating students
*B	72%
A	12%
C	10%
D	4%
E	1%

**Question 10, MACC.6.NS.2.2, MACC.5.NBT.2.5, and MASS.7.EE.2.4b**

**Description:** Solve a story problem involving costs and profit

**Difficulty:** Medium

**Complexity:** Moderate

Correct answer is **E**

Answers	Percent chosen by Florida's participating students
*E	50%
A	16%
B	11%
C	6%
D	17%

**Question 11, MACC.6.NS.2.3 and MACC.8.EE.1.4**

**Description:** Divide large numbers in a given context

**Difficulty:** Medium

**Complexity:** Low

Correct answer is **D**

Answers	Percent chosen by Florida's participating students
*D	50%
A	25%
B	5%
C	6%
E	12%



**Question 12, MACC.4.NF.1.2 and MACC.7.NS.1.2d**

**Description:** Identify fractions listed in ascending order

**Difficulty:** Medium

**Complexity:** Low

Correct answer is **A**

Answers	Percent chosen by Florida's participating students
*A	50%
B	18%
C	8%
D	7%
E	16%

**Question 13, MACC.3.NBT.1.1**

**Description:** Identify number rounded to nearest hundred

**Difficulty:** Medium

**Complexity:** Low

Correct answer is **D**

Answers	Percent chosen by Florida's participating students
*D	55%
A	7%
B	4%
C	21%
E	11%

**Question 14, MACC.3.NBT.1.1, MACC.4.NBT.2.6, and MACC.4.MD.1.2**

**Description:** Estimate time given rate and distance

**Difficulty:** Easy

**Complexity:** Low

Correct answer is **B**

Answers	Percent chosen by Florida's participating students
*B	66%
A	11%
C	14%
D	5%
E	3%

### Question 15, MACC.6.NS.2.3 and MACC.7.RP.1.3

**Description:** Determine distance given rate and time

**Difficulty:** Hard

**Complexity:** Moderate

Correct answer is E

Answers	Percent chosen by Florida's participating students
*E	33%
A	8%
B	22%
C	11%
D	27%

### Question 16, MACC.4.OA.1.3 and MACC.4.OA.3.5

**Description:** Use number properties to determine the parity of an unknown number

**Difficulty:** Hard

**Complexity:** Moderate

Sample Correct Response:

The fourth number would be any number ending in 1, 3, 5, 7, or 9 (i.e., could be any odd number, including saying "an(y) odd number.").

Explanation:

The sum of 4, 0, 1, 2, and 9 (the numbers visible in the ones column) is 16. In order for the sum of the six numbers to be odd, an odd number must be added (since an even number plus an odd number equals an odd number). Therefore, the missing number must be odd.

Note(s):

A correct response must contain 3 elements:

1. an odd number in the answer space (or the word(s) "odd" or "any odd number"),
2. an explanation or demonstration (in words or numerically) that the sum of the 5 visible numbers is even (using either the units digits or the entire numbers), and
3. a reference to the fourth number being odd and/or to the sum of the 6 numbers being odd

#### Score & Description

##### Correct

Correct response

##### Partial

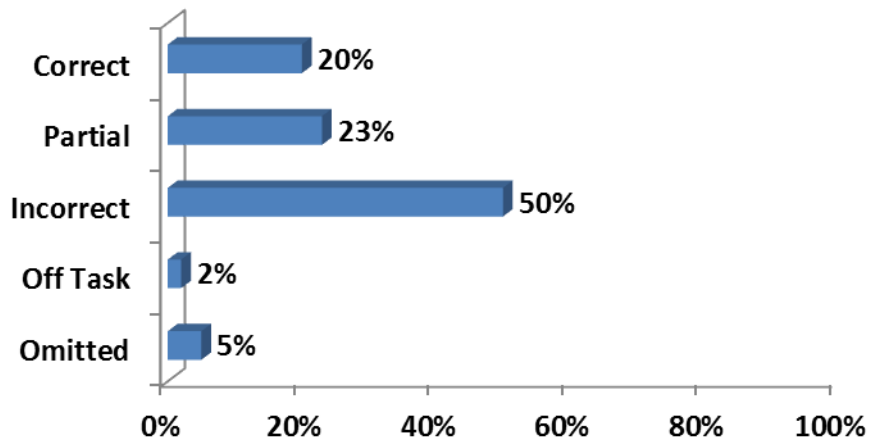
Response gives an odd number, but the accompanying explanation is insufficient.

##### Incorrect

Incorrect response includes an odd number answer with an incorrect or no explanation.

## Question 16, continued

### Florida Data



## Question 17, MACC.5.NBT.2.6

**Description:** Determine number that satisfies given conditions

**Difficulty:** Medium

**Complexity:** Moderate

Correct answer is **108**

### Score & Description

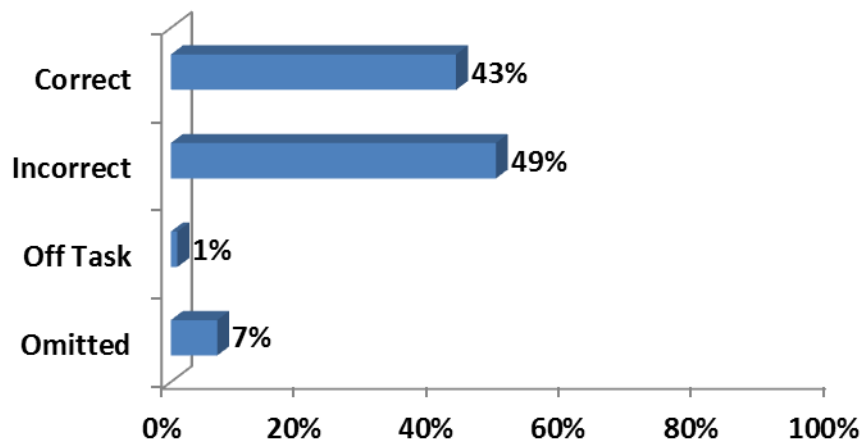
#### Correct

Correct response

#### Incorrect

Incorrect response

### Florida Data



## NAEP Grade 8 Algebra

### Question 1, MACC.6.EE.2.6 and MACC.6.EE.3.9

**Description:** Identify equation modeling a scenario

**Difficulty:** Easy

**Complexity:** Low

Correct answer is **B**

Answers	Percent chosen by Florida's participating students
*B	70%
A	8%
C	10%
D	9%
E	4%

### Question 2, MACC.6.EE.2.5

**Description:** Identify a non-equivalent equation

**Difficulty:** Medium

**Complexity:** Low

Correct answer is **A**

Answers	Percent chosen by Florida's participating students
*A	53%
B	8%
C	13%
D	5%
E	21%

**Question 3, MACC.6.EE.1.2c**

**Description:** Evaluate equation for a given value in context

**Difficulty:** Medium

**Complexity:** Low

Correct answer is **B**

Answers	Percent chosen by Florida's participating students
*B	45%
A	4%
C	27%
D	12%
E	11%

**Question 4, MACC.7.EE.2.4a**

**Description:** Identify equation modeling perimeter

**Difficulty:** Medium

**Complexity:** Low

Correct answer is **A**

Answers	Percent chosen by Florida's participating students
*A	44%
B	11%
C	13%
D	17%
E	14%

**Question 5, MACC.6.EE.2.6, MACC.6.EE.2.7, and MACC.7.EE.2.4**

**Description:** Determine equation to model a situation

**Difficulty:** Medium

**Complexity:** Moderate

Correct answer **C**

Answers	Percent chosen by Florida's participating students
*C	50%
A	9%
B	2%
D	35%
E	3%

**Question 6, MACC.8.EE.2.6**

**Description:** Determine equation of a line given a point and the slope

**Difficulty:** Hard

**Complexity:** Low

Correct answer is **E**

Answers	Percent chosen by Florida's participating students
*E	30%
A	11%
B	27%
C	10%
D	21%

**Question 7, MACC.8.F.2.5**

**Description:** Find interval of largest change on graph

**Difficulty:** Easy

**Complexity:** Moderate

Correct answer is **E**

Answers	Percent chosen by Florida's participating students
*E	69%
A	5%
B	6%
C	8%
D	11%

**Question 8, MACC.6.EE.2.5 and MACC.8.EE.3.7b**

**Description:** Find solution to equation

**Difficulty:** Hard

**Complexity:** Moderate

Correct answer is **B**

Answers	Percent chosen by Florida's participating students
*B	29%
A	5%
C	27%
D	25%
E	12%

**Question 9, MACC.7.EE.1.2, MACC.7.EE.2.4a, and MACC.8.F.2.4**

**Description:** Interpret a linear equation in content

**Difficulty:** Medium

**Complexity:** Moderate

Correct answer is **D**

Answers	Percent chosen by Florida's participating students
*D	42%
A	12%
B	25%
C	16%
E	5%

**Question 10, MACC.6.NS.3.6a, MACC.6.NS.3.7a, MACC.7.NS.1.1, MACC.7.NS.1.2a, and MACC.7.NS.1.3**

**Description:** Recognize effect of sign on operations

**Difficulty:** Hard

**Complexity:** Moderate

Correct answer is **B**

Answers	Percent chosen by Florida's participating students
*B	30%
A	20%
C	9%
D	31%
E	13%

**Question 11, MACC.6.EE.2.6 and MACC.7.EE.2.4**

**Description:** Find solution to equation

**Difficulty:** Hard

**Complexity:** Moderate

**Sample Correct Response:**

Answer:  $12 + 6(n - 1)$  or  $6n + 6$  or any other equivalent form

**OR**

cost =  $12 + 6(n - 1)$  or cost =  $6n + 6$  or any other equivalent form

## Question 11, continued

### Score & Description

#### Correct

Correct response

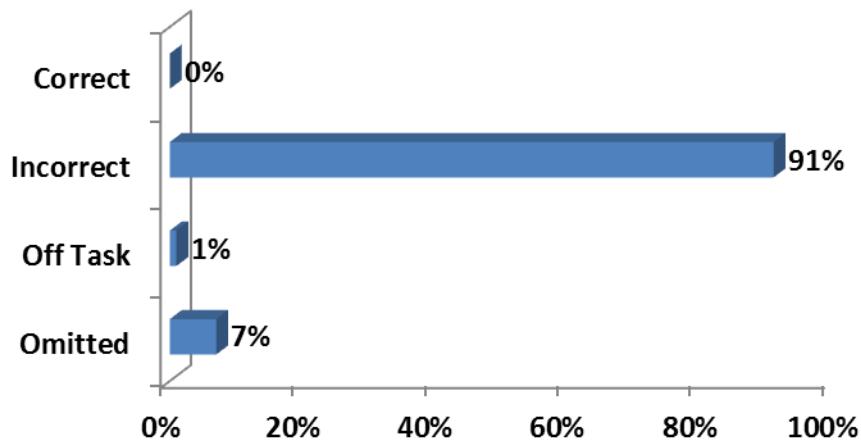
#### Partial

An acceptable expression or equation for cost with one or more variables not defined

#### Incorrect

Incorrect response

### Florida Data



## Question 12, MACC.6.RP.1.3 and MACC.7.RP.1.2

**Description:** Find the next term in a geometric sequence

**Difficulty:** Hard

**Complexity:** Moderate

#### Solution:

17,920

### Score & Description

#### Correct

Correct response

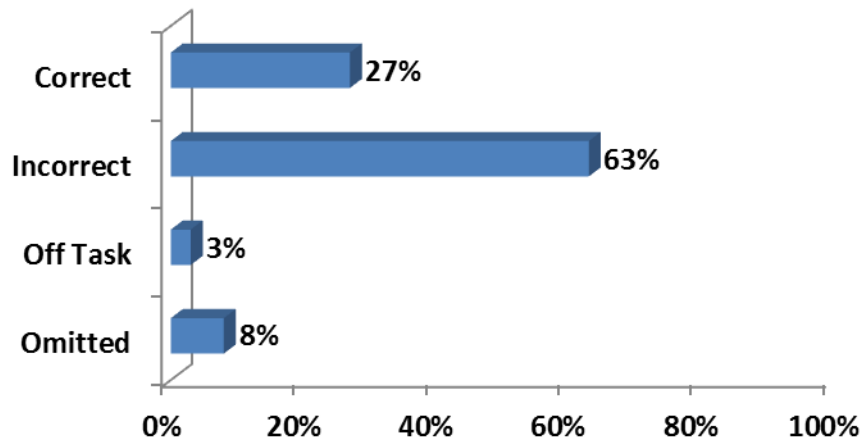
#### Incorrect

Incorrect response



## Question 12, continued

### Florida Data



## NAEP Grade 8 Measurement

### Question 1, MACC.7.RP.1.2, MACC.7.RP.1.3, and MACC.8.G.1.4

**Description:** Determine distance using similar triangles

**Difficulty:** Hard

**Complexity:** Moderate

Correct answer is **C**

Answers	Percent chosen by Florida's participating students
*C	34%
A	22%
B	21%
D	17%
E	5%

### Question 2, MACC.6.EE.2.7 and MACC.5.NBT.2.5

**Description:** Convert dollars to yen

**Difficulty:** Hard

**Complexity:** Moderate

Correct answer is **E**

Answers	Percent chosen by Florida's participating students
*E	30%
A	7%
B	25%
C	19%
D	18%

**Question 3, MACC.7.G.2.6, MACC.5.NBT.2.5, and MACC.4.NBT.2.5**

**Description:** Find area of irregular-shaped region on a grid

**Difficulty:** Medium

**Complexity:** Moderate

Correct answer is **D**

Answers	Percent chosen by Florida's participating students
*D	43%
A	10%
B	13%
C	19%
E	14%

**Question 4, MACC.4.MD.1.1 and MACC.4.MD.1.2**

**Description:** Recognize a unit of volume

**Difficulty:** Medium

**Complexity:** Low

Correct answer is **C**

Answers	Percent chosen by Florida's participating students
*C	55%
A	8%
B	18%
D	14%
E	5%

**Question 5, MACC.6.NS.2.3 and MACC.5.MD.1.1**

**Description:** Convert between units of measurement

**Difficulty:** Medium

**Complexity:** Moderate

Correct answer is **E**

Answers	Percent chosen by Florida's participating students
*E	43%
A	9%
B	24%
C	11%
D	12%

### Question 6, MACC.5.MD.1.1 and MACC.6.RP.1.3d

**Description:** Solve arithmetic problem involving time

**Difficulty:** Medium

**Complexity:** Low

Correct answer is **C**

Answers	Percent chosen by Florida's participating students
*C	52%
A	10%
B	30%
D	8%

### Question 7, MACC.4.OA.2.4 and MACC.3.MD.3.7

**Description:** Determine possible dimensions of rectangle, given area

**Difficulty:** Easy

**Complexity:** Low

Correct answer is **A**

Answers	Percent chosen by Florida's participating students
*A	69%
B	8%
C	10%
D	5%
E	8%

### Question 8, MACC.6.G.1.1

**Description:** Determine area of a right trapezoid

**Difficulty:** Hard

**Complexity:** Moderate

Correct answer is **C**

Answers	Percent chosen by Florida's participating students
*C	17%
A	17%
B	34%
D	20%
E	10%

### Question 9, MACC.5.MD.1.1 and MACC.6.NS.2.2

**Description:** Solve story problem involving milliliters and liters

**Difficulty:** Hard

**Complexity:** Moderate

Correct answer is **C**

Answers	Percent chosen by Florida's participating students
*C	34%
A	31%
B	9%
D	9%
E	15%

### Question 10, MACC.5.G.2.4, MACC.6.RP.1.1, and MACC.6.RP.1.2

**Description:** Determine degree measure formed by clock hands

**Difficulty:** Medium

**Complexity:** Low

Correct answer is **D**

Answers	Percent chosen by Florida's participating students
*D	52%
A	11%
B	19%
C	10%
E	3%

### Question 11, MACC.8.NS.1.1, MACC.8.NS.1.2, and MACC.4.MD.1.3

**Description:** Estimate side length of a square given area

**Difficulty:** Medium

**Complexity:** Low

Correct answer is **C**

Answers	Percent chosen by Florida's participating students
*C	42%
A	7%
B	24%
D	7%
E	18%

### Question 12, MACC.3.MD.3.5a and MACC.4.MD.1.1

**Description:** Recognize unit associated with specific attribute

**Difficulty:** Easy

**Complexity:** Low

Correct answer is **B**

Answers	Percent chosen by Florida's participating students
*B	72%
A	12%
C	11%
D	3%
E	2%

### Question 13, MACC.5.NBT.2.5, MACC.5.MD.3.3, and MACC.5.MD.3.5

**Description:** Determine dimensions that give greatest volume

**Difficulty:** Easy

**Complexity:** Low

Correct answer is **A**

Answers	Percent chosen by Florida's participating students
*A	76%
B	8%
C	8%
D	6%
E	2%

### Question 14, MACC.7.G.2.4, MACC.7.NS.1.2, and MACC.6.NS.2.3

**Description:** Approximate the length of the radius of a circle

**Difficulty:** Hard

**Complexity:** Moderate

Correct answer is **C**

Answers	Percent chosen by Florida's participating students
*C	21%
A	2%
B	8%
D	43%
E	25%

### Question 15, MACC.7.EE.2.4a and MACC.4.MD.1.3

**Description:** Find length of a rectangle given perimeter and width

**Difficulty:** Hard

**Complexity:** Low

Correct answer is **C**

Answers	Percent chosen by Florida's participating students
*C	40%
A	18%
B	11%
D	10%
E	18%

### Question 16, MACC.4.MD.2.4 and MACC.5.MD.2.2

**Description:** Determine value of marks on scale

**Difficulty:** Medium

**Complexity:** Low

**Solution:**

$1\frac{3}{4}$  pounds

#### Score & Description

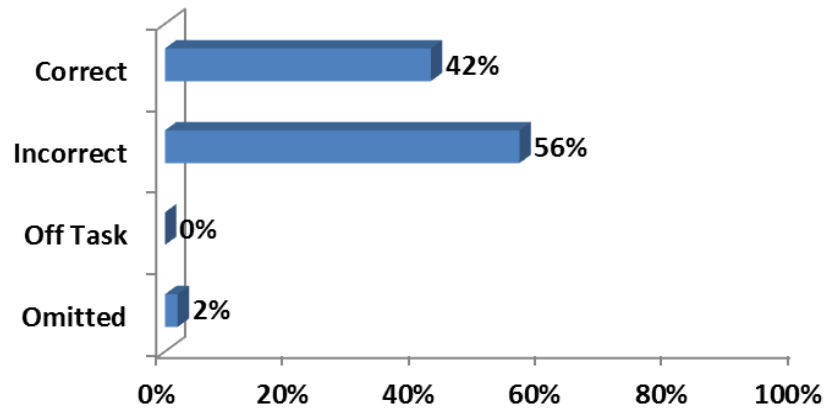
##### Correct

Correct response

##### Incorrect

Incorrect response

## Florida Data



### Question 17, MACC.6.G.1.1

**Description:** Determine how many tiles would cover a table top

**Difficulty:** Hard

**Complexity:** Moderate

**Solution:**

200 or 200 tiles

#### Score & Description

**Correct**

Correct response

**Incorrect**

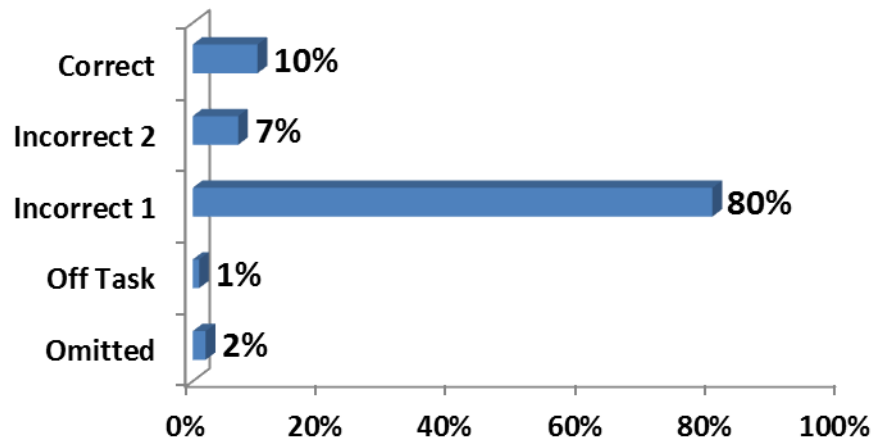
1,000

**Incorrect**

Any incorrect response other than 1,000.



## Florida Data



Incorrect 1 refers to responses of 1000. Incorrect 2 refers to other incorrect responses.

## NAEP Grade 8 Geometry

### Question 1, MACC.8.G.1.1 and MACC.8.G.1.2

**Description:** Reflect a figure over a line

**Difficulty:** Medium

**Complexity:** Low

Correct answer is **D**

Answers	Percent chosen by Florida's participating students
*D	54%
A	19%
B	10%
C	9%
E	8%

### Question 2, MACC.8.G.1.1c

**Description:** Determine how three lines are related

**Difficulty:** Easy

**Complexity:** Low

Correct answer is **C**

Answers	Percent chosen by Florida's participating students
*C	60%
A	7%
B	16%
D	8%
E	8%

### Question 3, MACC.4.G.1.3

**Description:** Analyze subdivision of regular polygons

**Difficulty:** Hard

**Complexity:** Moderate

Correct answer is **E**

Answers	Percent chosen by Florida's participating students
*E	32%
A	10%
B	12%
C	14%
D	30%

### Question 4, MACC.7.RP.1.2, MACC.7.RP.1.3, and MACC.8.G.1.4

**Description:** Compare similar parallelograms

**Difficulty:** Medium

**Complexity:** Low

Correct answer is **E**

Answers	Percent chosen by Florida's participating students
*E	45%
A	4%
B	4%
C	7%
D	39%

### Question 5, MACC.6.G.1.4

**Description:** Identify net that folds into box

**Difficulty:** Medium

**Complexity:** Moderate

Correct answer is **D**

Answers	Percent chosen by Florida's participating students
*D	53%
A	11%
B	8%
C	9%
E	19%

### Question 6, MACC.7.G.2.4 and MACC.3.MD.3.5

**Description:** Determine radius of a circle inscribed in a square

**Difficulty:** Medium

**Complexity:** Moderate

Correct answer is **D**

Answers	Percent chosen by Florida's participating students
*D	58%
A	2%
B	16%
C	11%
E	13%

### Question 7, MACC.5.G.2.3 and MACC.5.G.2.4

**Description:** Identify students who correctly classify a figure

**Difficulty:** Hard

**Complexity:** Moderate

Correct answer is **E**

Answers	Percent chosen by Florida's participating students
*E	24%
A	29%
B	19%
C	14%
D	14%

### Question 8, MACC.8.G.1.2

**Description:** Identify image of figure after rotation

**Difficulty:** Easy

**Complexity:** Low

Correct answer is **A**

Answers	Percent chosen by Florida's participating students
*A	77%
B	8%
C	1%
D	6%
E	8%

**Question 9, MACC.6.NS.3.6b****Description:** Determine coordinates after reflection**Difficulty:** Hard**Complexity:** LowCorrect answer is **B**

Answers	Percent chosen by Florida's participating students
*B	34%
A	30%
C	18%
D	7%
E	10%

**Question 10, MACC.8.G.2.7****Description:** Find length of hypotenuse**Difficulty:** Medium**Complexity:** LowCorrect answer is **C**

Answers	Percent chosen by Florida's participating students
*C	36%
A	7%
B	19%
D	31%
E	4%

**Question 11, MACC.6.G.1.4****Description:** Determine number of edges in a 3-D figure**Difficulty:** Medium**Complexity:** LowCorrect answer is **E**

Answers	Percent chosen by Florida's participating students
*E	45%
A	1%
B	13%
C	39%
D	2%

**Question 12, MACC.8.G.1.2**

**Description:** Identify side with same length in congruent figures

**Difficulty:** Easy

**Complexity:** Low

Correct answer is **C**

Answers	Percent chosen by Florida's participating students
*C	73%
A	6%
B	2%
D	14%
E	4%

**Question 13, MACC.8.G.1.2**

**Description:** Identify piece used to form figure

**Difficulty:** Medium

**Complexity:** Moderate

Correct answer is **A**

Answers	Percent chosen by Florida's participating students
*A	46%
B	13%
C	21%
D	7%
E	13%

### Question 14, MACC.4.G.1.1

**Description:** Sketch polygon based on description

**Difficulty:** Easy

**Complexity:** Moderate

**Solution:**

**Sample Correct Response:**



#### Score & Description

##### Correct

Correct response

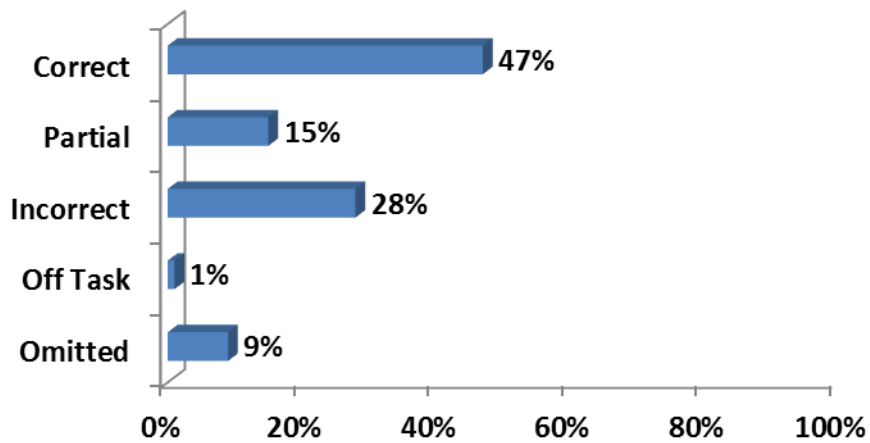
##### Partial

Drawing is a 4-sided figure with only one pair of sides correct.

##### Incorrect

Incorrect response

### Florida Data



### Question 15, MACC.7.G.1.2 and MACC.8.G.3.9

**Description:** Find container height given dimensions of contents

**Difficulty:** Hard

**Complexity:** Moderate

**Solution:**

18 centimeters

Each ball has a diameter of 6 centimeters (2 times the radius of 3) and  $3 \text{ balls} \times 6 \text{ centimeters/ball} = 18$  centimeters

(Explanation may include a figure or statement that shows a visual understanding of the question.)

#### Score & Description

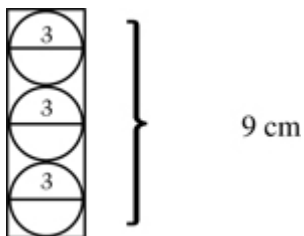
**Correct**

Correct response, which will include both 18 centimeters and the correct diagram or a complete explanation

**Partial**

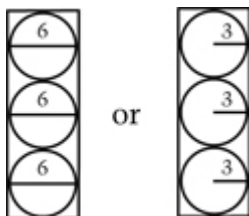
18 centimeters with incomplete, incorrect, or missing diagram or explanation

Correct supporting diagram/explanation with incorrect height



**OR**

Correct diagram or explanation



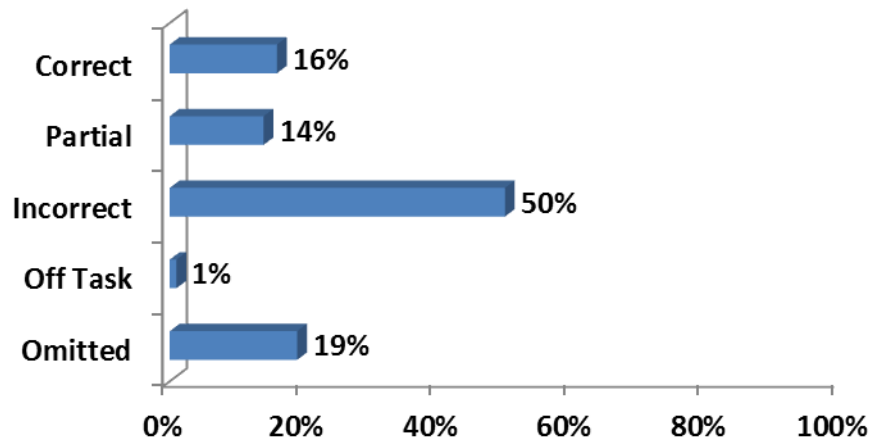
**Incorrect**

Incorrect response



## Question 15, continued

### Florida Data



## NAEP Grade 8 Data Analysis and Probability

### Question 1, MACC.7.SP.3.5 and MACC.7.SP.3.6

**Description:** Make an inference given a probability

**Difficulty:** Easy

**Complexity:** Moderate

Correct answer is **A**

Answers	Percent chosen by Florida's participating students
*A	62%
B	6%
C	8%
D	5%
E	19%

### Question 2, MACC.4.OA.3.5

**Description:** Find how many 3-digit numbers can be written

**Difficulty:** Easy

**Complexity:** Low

Correct answer is **B**

Answers	Percent chosen by Florida's participating students
*B	62%
A	14%
C	13%
D	8%
E	3%

### Question 3, MACC.7.SP.3.5 and MACC.7.SP.3.6

**Description:** Determine the probability of a particular outcome

**Difficulty:** Easy

**Complexity:** Low

Correct answer is **B**

Answers	Percent chosen by Florida's participating students
*D	77%
A	5%
B	5%
C	12%

**Question 4, MACC.7.SP.3.5 and MACC.7.SP.3.6****Description:** Use experimental results to make a prediction**Difficulty:** Hard**Complexity:** ModerateCorrect answer is **D**

Answers	Percent chosen by Florida's participating students
*D	29%
A	4%
B	11%
C	46%
E	9%

**Question 5, MACC.4.MD.1.2****Description:** Read and interpret information in a graph**Difficulty:** Medium**Complexity:** ModerateCorrect answer is **B**

Answers	Percent chosen by Florida's participating students
*B	38%
A	14%
C	20%
D	19%
E	8%

**Question 6, MACC.6.SP.2.5c****Description:** Identify which statistic is represented by response**Difficulty:** Medium**Complexity:** LowCorrect answer is **C**

Answers	Percent chosen by Florida's participating students
*C	69%
A	13%
B	7%
D	7%
E	3%

**Question 7, MACC.5.G.1.2****Description:** Determine most appropriate graph for a situation**Difficulty:** Easy**Complexity:** LowCorrect answer is **C**

Answers	Percent chosen by Florida's participating students
*C	83%
A	4%
B	5%
D	3%
E	5%

**Question 8, MACC.7.NS.1.3****Description:** Find total cost based on unit price for a quantity**Difficulty:** Easy**Complexity:** LowCorrect answer is **C**

Answers	Percent chosen by Florida's participating students
*C	80%
A	6%
B	6%
D	6%
E	2%

**Question 9, MACC.7.SP.3.5 and MACC.7.SP.3.6****Description:** Determine an expected outcome**Difficulty:** Medium**Complexity:** LowCorrect answer is **A**

Answers	Percent chosen by Florida's participating students
*A	58%
B	15%
C	17%
D	5%
E	5%

### Question 10, MACC.4.OA.3.5

**Description:** Find number of combinations satisfying a condition

**Difficulty:** Hard

**Complexity:** Moderate

Correct answer is **C**

Answers	Percent chosen by Florida's participating students
*C	15%
A	33%
B	14%
D	21%
E	16%

### Question 11, MACC.7.SP.3.5 and MACC.7.SP.3.7b

**Description:** Explain a probability concept

**Difficulty:** Easy

**Complexity:** Low

**Solution:**

**Sample Correct Response:**

Correct oval: Yes

Explanation:

This is true because the number of blue marbles in the bowl is equal to the number of yellow marbles.

Note(s):

- Address that the chances of picking a blue marble or picking a yellow marble are equal. It is not a complete response to restate that there are 20 blue marbles and 20 yellow marbles; it is that the numbers are equal.
- Correctly calculate the probability of selecting a blue or yellow marble (each is equal to  $\frac{20}{50}$  or  $\frac{2}{5}$  equivalent).

### Score & Description

**Correct**

- Fills in correct oval AND provides a complete explanation

**Partial 1**

- Fills in correct oval AND provides an incomplete or partially correct explanation
- Partial 2
- Fills in neither oval AND provides a complete or incomplete explanation that supports a response of "yes"

## Question 11, continued

### Partial 2

Fills in neither oval AND provides a complete or incomplete explanation that supports a response of "yes"

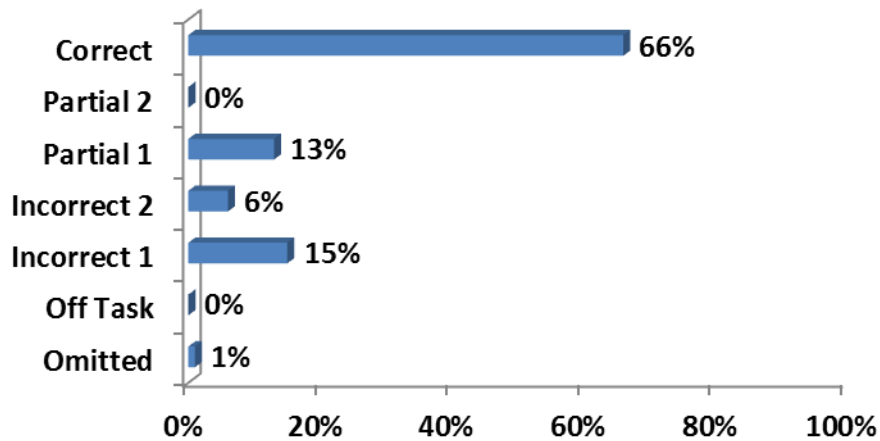
### Incorrect 1

Fills in correct oval WITH incorrect explanation or no explanation

### Incorrect 2

Other incorrect responses

### Florida Data



## Question 12, MACC.6.SP.1.2, MACC.6.SP.2.5c, and MACC.6.SP.2.5d

**Description:** Explain which statistic is best in given situation

**Difficulty:** Hard

**Complexity:** Moderate

### Solution:

Median. The mean is lowered by one low number, 10.

### Score & Description

#### Correct

States median and explains that the mean is lowered by one low number

#### Partial

Median with incomplete, incorrect, or missing explanation

#### OR

Mean with median explanation

#### Incorrect

Incorrect response

## Question 12, continued

### Florida Data

