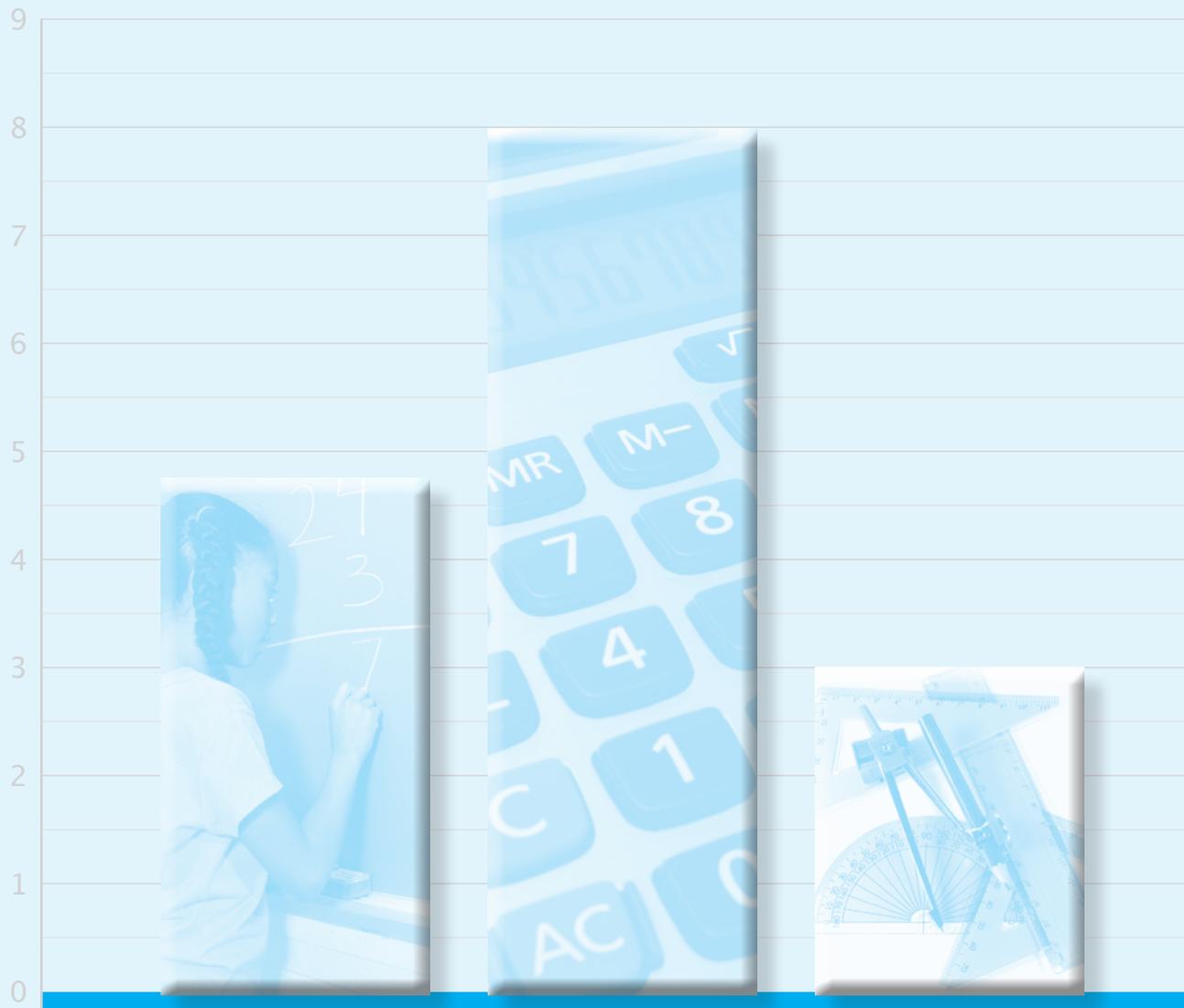


3rd  
4th  
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8th

Grade  
**4**

**meap**<sup>TM</sup>  
Michigan Educational Assessment Program

# Item Descriptors



**MATHEMATICS**  
**FALL 2009**

**MICHIGAN STATE BOARD OF EDUCATION****STATEMENT OF ASSURANCE OF COMPLIANCE WITH FEDERAL LAW**

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Portions of this work were previously published.

Printed in the United States of America.

Students were instructed to read the directions below silently as the test administrator read them aloud.

## PART 1

### DIRECTIONS

This test has two parts. You may **NOT** use a calculator on Part 1. You may use open space in this test booklet for scratch paper. No additional paper may be used.

Part 1 has only multiple-choice questions. You must choose the **best** answer from among four answer choices.

- Use only a No. 2 pencil to mark your answer in your **Answer Document**.
- If you erase an answer, be sure to erase it completely.
- If you skip a question, be sure to mark the answer to the next question in the correct place in your **Answer Document**.

### Sample Multiple-Choice Question:

Jackie had 56 trading cards. She gave some of the cards to Wanda. Then Jackie had 23 trading cards left. What was the total number of cards Jackie gave to Wanda?

- A** 23
- B** 33
- C** 39
- D** 79

For this sample question, the correct answer is **B**. Circle **B** is filled in on the sample question in your **Answer Document**.

Once you have reached the word **STOP** in your test booklet, do **NOT** go on to the next page.

If you finish early, you may check your work in Part 1 of the test **ONLY**. Do **NOT** look at questions in Part 2 of the test.

**NOTE: For each item listed throughout this booklet, the first statement is a summary of the Michigan Grade Level Content Expectation (GLCE) and the second statement or problem is the descriptor for the item's stem or question.**

- 1 N.ME.03.16:** Understand the meaning and terminology of fractions.

Given the fraction strip, determine the fractional shaded portion.

- A** ratio of unshaded portion to shaded portion
- B** ratio of shaded portion to unshaded portion
- C** unshaded area
- D** correct

- 2 N.ME.03.16:** Understand the meaning and terminology of fractions.

Identify the fraction with the given numerator.

- A** denominator
- B** neither denominator nor numerator
- C** correct
- D** neither denominator nor numerator

- 3 N.ME.03.18:** Place and compare fractions on a number line.

Order three unit fractions from least to greatest.

- A** greatest to least
- B** correct
- C** mixed order
- D** mixed order

- 4 N.ME.03.17:** Recognize, name, and use equivalent fractions.

Given the fraction strip, identify the strip that shows the equivalent fraction.

- A** nonequivalent fraction model
- B** correct
- C** nonequivalent fraction model
- D** nonequivalent fraction model

- 5 N.ME.03.17:** Recognize, name, and use equivalent fractions.

Given the fraction strip, identify the strip that shows the equivalent fraction.

- A** complement of given fraction model
- B** nonequivalent fraction model
- C** nonequivalent fraction model
- D** correct

- 6 N.ME.03.18:** Place and compare fractions on a number line.

Identify a point on the number line.

- A** value of scale
- B** incorrect fraction
- C** correct
- D** increased value moving right to left from whole number

- 7 N.MR.03.09:** Use multiplication and division to show the inverse relationship.

Find the fourth fact of a multiplication/division fact family.

- A** addition fact
- B** correct
- C** multiplication fact, but not in family
- D** multiplication fact, but not in family

- 8 N.MR.03.09:** Use multiplication and division to show the inverse relationship.

Find the fourth fact of multiplication/division fact family.

- A** addition fact
- B** multiplication fact
- C** subtraction fact
- D** correct

- 9 N.MR.03.10:** Recognize multiplication and division situations.

Given the contextualized situation, identify the operation.

- A** divided
- B** correct
- C** added
- D** subtracted

- 10 N.MR.03.10:** Recognize multiplication and division situations.

Given the contextualized situation, identify the operation.

- A** multiplied
- B** added
- C** correct
- D** transposed dividend and divisor

- 11 N.FL.03.11:** Find products up to  $10 \times 10$  and related quotients.

Divide a 2-digit number by a 1-digit number.

- A** correct
- B** incorrect quotient
- C** incorrect quotient
- D** incorrect quotient

- 12 N.FL.03.11:** Find products up to  $10 \times 10$  and related quotients.

Given the product, identify its factors.

- A**  $xy = x \times y$  ( $xy$  is 2-digit number, not product)
- B** correct
- C** incorrect factor  $\times$  incorrect factor
- D** correct factor  $\times$  incorrect factor

- 13 G.GS.03.01:** Identify points, line segments, lines, and distance.

Identify a line.

- A** correct
- B** ray, not line
- C** line segment
- D** angle

- 14 G.GS.03.01:** Identify points, line segments, lines, and distance.

Identify a line segment.

- A** ray
- B** ray
- C** line, not line segment
- D** correct

- 15 G.SR.03.05:** Compose and decompose triangles and rectangles.

Put together rectangles and triangles without overlapping.

- A** incorrect shape, too large
- B** incorrect shape, too large
- C** correct
- D** incorrect shape, too small

- 16 G.GS.03.02:** Identify perpendicular lines and parallel lines.

Identify perpendicular sides of an object.

- A** parallel sides
- B** parallel sides
- C** parallel sides
- D** correct

- 17 G.GS.03.04:** Identify, describe, compare, and classify 2-D shapes.

Identify the number of sides of a polygon.

- A** correct
- B** incorrect number of sides
- C** incorrect number of sides
- D** incorrect number of sides

- 18 G.GS.03.06:** Identify, describe, and classify familiar 3-D solids.

Identify the number of vertices of a solid.

- A** too many vertices
- B** correct
- C** too few vertices
- D** too few vertices

- 19 G.GS.03.02:** Identify perpendicular lines and parallel lines.

Identify parallel lines.

- A** perpendicular
- B** neither parallel nor perpendicular
- C** neither parallel nor perpendicular
- D** correct

- 20 G.GS.03.03:** Identify parallel faces of rectangular prisms.

Identify parallel faces.

- A** perpendicular faces
- B** perpendicular faces
- C** perpendicular faces
- D** correct

- 21 G.GS.03.03:** Identify parallel faces of rectangular prisms.

Identify parallel faces.

- A** perpendicular faces
- B** perpendicular faces
- C** correct
- D** perpendicular faces

- 22 G.SR.03.05:** Compose and decompose triangles and rectangles.

Given the polygon, identify its component parts.

- A** too few triangles to compose shape
- B** too few triangles to compose shape
- C** too few triangles to compose shape
- D** correct

- 23 G.GS.03.06:** Identify, describe, and classify familiar 3-D solids.

Identify a 3-D solid.

- A** incorrect 3-D solid
- B** incorrect 3-D solid
- C** correct
- D** 2-D shape

- 24 G.GS.03.04:** Identify, describe, compare, and classify 2-D shapes.

Identify the shape that does not have the same number of vertices as the given shape.

- A** incorrect shape
- B** incorrect shape
- C** correct
- D** incorrect shape

- 25 M.UN.03.07:** Distinguish between units of length and area, in context.

Identify the reasonable length of an object.

- A** correct
- B** unrealistic length
- C** area measurement
- D** area measurement

**26 M.UN.03.06:** Find the area of a region by covering and counting square units.

Find the area of the polygon.

- A** measure of length
- B** measure of length + measure of width
- C** incorrect area
- D** correct

**27 M.TE.03.09:** Estimate the perimeter and area of a square and rectangle.

Use the grid to determine the area in square centimeters of the rectangle.

- A** measure of length + measure of width
- B** measure of perimeter = measure of area
- C** correct
- D** incorrect area

**28 M.UN.03.06:** Find the area of a region by covering and counting square units.

Find the area in square units of the concave polygon.

- A** correct
- B** included 2 square units outside concave polygon
- C** included 4 square units outside concave polygon
- D** incorrect area

**29 M.UN.03.07:** Distinguish between units of length and area, in context.

Identify the reasonable area.

- A** length measurement
- B** length measurement
- C** unrealistic area measurement
- D** correct

- 30 M.TE.03.09:** Estimate the perimeter and area of a square and rectangle.

Estimate the area of the square in square centimeters.

- A** correct
- B** incorrect area
- C** measure of length + measure of width
- D** measure of length

- 31 G.SR.03.07:** Show the front, top, and side views of solids built with cubes.

Given the top view of a solid made of cubes, identify the solid.

- A** correct
- B** incorrect solid
- C** incorrect solid
- D** incorrect solid

- 32 D.RE.03.02:** Read scales on axes; identify the maximum, minimum, and range.

Identify the minimum of data displayed in the graph.

- A** smallest value of options given
- B** correct
- C** not maximum, minimum, or range
- D** maximum

- 33 N.ME.03.03:** Compare and order numbers up to 10,000.

Order three 4-digit numbers from greatest to least.

- A** correct
- B** mixed order
- C** least to greatest
- D** mixed order

**(34 deleted)**

**35 M.UN.03.05:** Calculate the area/perimeter of a square and rectangle.

Given the drawing of a rectangle with one length and one width shown, calculate the area.

- A** measure of length + measure of width
- B** measure of perimeter
- C** correct
- D** twice the area

**36 N.MR.03.14:** Solve division problems involving remainders.

Determine the remainder in a contextualized setting.

- A** remainder = divisor
- B** incorrect remainder
- C** incorrect remainder
- D** correct

**37 N.MR.03.14:** Solve division problems involving remainders.

Determine the quotient in a contextualized setting.

- A** incorrect quotient
- B** correct
- C** incorrect quotient
- D** incorrect quotient

**38 N.MR.03.15:** Identify the operation for a problem and solve.

Determine the difference in a contextualized setting.

- A** added instead of subtracted
- B** 10 more than difference
- C** correct
- D** 10 fewer than difference

- 39 N.MR.03.15:** Identify the operation for a problem and solve.

Determine the product in a contextualized setting.

- A** incorrect product
- B** incorrect product
- C** correct
- D** incorrect product

- 40 M.PS.03.12:** Solve problems involving money, length, and time.

Determine the sum in a contextualized setting.

- A** added cents properly but incorrectly added dollars
- B** added dollars but subtracted cents
- C** ten cents below total
- D** correct

- 41 M.PS.03.12:** Solve problems involving money, length, and time.

Calculate with dates of the month.

- A** incorrect date
- B** incorrect date
- C** incorrect date
- D** correct

- 42 M.PS.03.13:** Solve problems about the perimeter and area of rectangles.

Given the drawing of a rectangle with one length and one width shown, calculate its perimeter.

- A** perimeter = length + width
- B** perimeter = length + width + width
- C** perimeter = length + length + width
- D** correct

**43 M.PS.03.13:** Solve problems about the perimeter and area of rectangles.

Given the length in feet and width in feet, calculate the area in square feet.

- A** measure of area =  
measure of (length + width)
- B** measure of area =  
measure of (length + width +  
width)
- C** correct
- D** measure of area =  
measure of perimeter

**44 N.ME.03.21:** Understand the meaning of 0.50 and 0.25, related to money.

Translate decimal notation of dollar amount to fraction.

- A** incorrect fraction
- B** incorrect fraction
- C** incorrect fraction
- D** correct

Students were instructed to read the directions below silently as the test administrator read them aloud.

## PART 2

### DIRECTIONS

You will now begin Part 2 of this test. You may use a calculator on this part of the test, and you may use open space in this test booklet for scratch paper. No additional paper may be used.

This part of the test has only multiple-choice questions. You must choose the **best** answer from among four answer choices.

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### Sample Multiple-Choice Question:

Jackie had 56 trading cards. She gave some of the cards to Wanda. Then Jackie had 23 trading cards left. What was the total number of cards Jackie gave to Wanda?

- A** 23
- B** 33
- C** 39
- D** 79

For this sample question, the correct answer is **B**. Circle **B** is filled in on the sample question in your **Answer Document**.

Once you have reached the word **STOP** in your test booklet, do **NOT** go on to the next page.

If you finish early, you may check your work in Part 2 of the test **ONLY**. Do **NOT** look at questions in Part 1 of the test.

- 45 M.PS.03.11:** Add and subtract money in dollars and cents.

Subtract the dollar amounts in decimal notation.

- A** correct
- B** subtracted smaller values from larger values
- C** added incorrectly instead of subtracted
- D** added instead of subtracted

- 46 N.ME.03.01:** Read and write numbers up to 10,000.

Translate the word form of a number to a numeral.

- A** correct
- B**  $a,bcd = a00,0b0,0cd$
- C**  $a,bcd = ab0,0cd$
- D**  $a,bcd = a,000,bcd$

- 47 N.ME.03.02:** Identify the place value of a digit in a number.

Identify the place value of a digit in 4-digit number.

- A** place value too large
- B** correct
- C** place value too small
- D** face value (place value too small)

- 48 N.ME.03.05:** Know that even numbers end in 0, 2, 4, 6 or 8.

Given three numbers, skip count to find next three numbers.

- A** did not apply pattern, skip counted by 1s
- B** applied pattern for 1st term, skip counted by 1s afterward
- C** correct
- D** applied pattern correctly for next 2 terms, not 3rd term

**49 N.FL.03.06:** Add and subtract through 999 with regrouping, and through 9,999 without regrouping.

Subtract a 3-digit number from a 3-digit number.

- A** correct
- B** error in 1s place
- C** error in 10s place
- D** subtracted smaller values from larger values

**50 N.FL.03.07:** Estimate the sum and difference of two 3-digit numbers.

Estimate the sum of two 3-digit numbers.

- A** estimation error
- B** estimation error
- C** truncated to hundreds and added
- D** correct

**51 N.MR.03.12:** Find solutions to open sentences that use multiplication and division.

$$\underline{\quad} \div x = y$$

- A** factor of correct dividend
- B** incorrect dividend
- C** correct
- D** incorrect dividend

**52 N.ME.03.19:** Understand a fraction as the sum of unit fractions.

Given the fraction, identify the sum of unit fractions.

- A** correct
- B** reciprocal
- C**  $a/b + c/d = (a + c)/(b + d)$
- D** unit fractions sum to reciprocal

**53 N.MR.03.20:** Model addition and subtraction of fractions on a number line.

Identify addition of fractions shown on a number line.

- A** added, but with incorrect fractions
- B** subtracted with incorrect fractions
- C** correct
- D** subtracted instead of added

**54 M.UN.03.01:** Use common measures of length, weight, and time.

Identify the unit of length.

- A** unit of volume, not length
- B** unit of mass (weight)
- C** unit of mass (weight)
- D** correct

**55 M.UN.03.02:** Measure in mixed units within a measurement system.

Measure the length of an object in meters and centimeters.

- A** truncated the measurement
- B** correct
- C** rounded up incorrectly to next whole meter
- D** added extra meter

**56 M.UN.03.03:** Use relationships between sizes of standard units.

Identify the greatest weight in pounds and ounces.

- A** neither least nor greatest weight
- B** correct
- C** least, not greatest weight
- D** neither least nor greatest weight

**57 M.UN.03.04:** Know benchmark temperatures; compare cooler and warmer temperatures.

Identify the benchmark temperature.

- A** benchmark measure with incorrect scale
- B** correct
- C** incorrect measure for either scale
- D** benchmark measure with incorrect scale

**58 M.UN.03.08:** Compare the relative sizes of square inch and square centimeter.

Identify the shape with an area of square centimeter.

- A** square inch
- B** smaller than square cm
- C** correct
- D** smaller than square inch, larger than square cm

**59 M.PS.03.10:** Add and subtract lengths, weights, and times.

Calculate the difference between two times.

- A** correct number of minutes, but incorrect number of hours
- B** correct number of hours, but incorrect number of minutes
- C** correct
- D** incorrect number of hours and minutes

**60 D.RE.03.01:** Read and interpret horizontal and vertical bar graphs.

Determine the range on the horizontal bar graph.

- A** maximum + minimum = range
- B** maximum
- C** correct
- D** minimum

**61 D.RE.03.03:** Solve problems using bar graphs; compare graphs.

Determine the trend shown in the horizontal bar graph.

- A** misread graph
- B** opposite of trend shown in graph
- C** misread graph
- D** correct







3rd

4th

5th

6th

7th

8th



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