4th

5th

6th

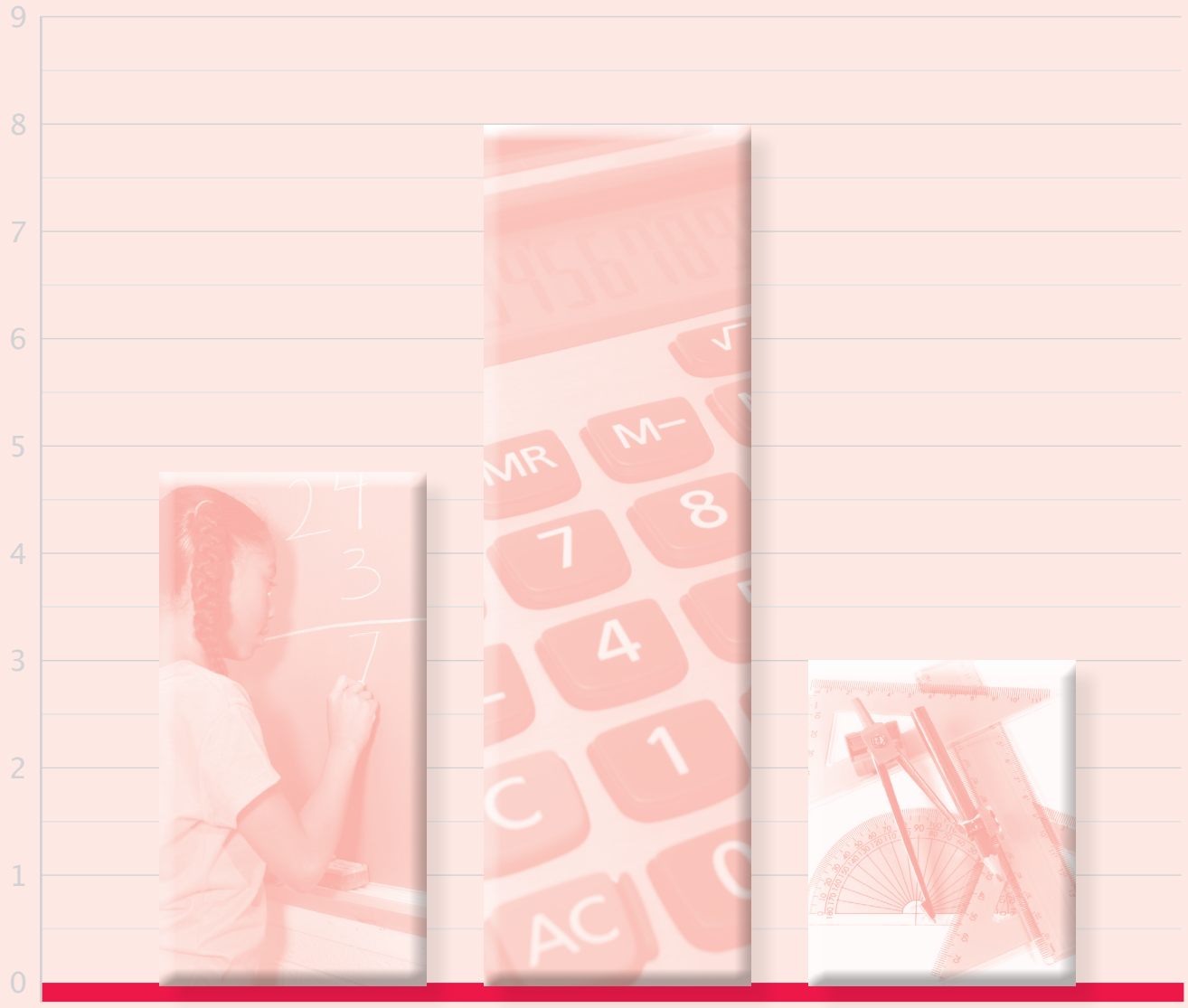
7th

8th

Grade 5

meap™
Michigan Educational Assessment Program

Item Descriptors



MATHEMATICS

FALL 2012

MICHIGAN STATE BOARD OF EDUCATION
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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 is the descriptor for the item's stem or question.

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:

In this part, you will answer multiple-choice mathematics questions. Some questions will ask you to view a picture, chart, or other mathematics-related information. Use that information with what you know to answer the question. You may **NOT** use a calculator for this part of the test.

You must mark all of your answers in Part 1 of your **Answer Document** with a No. 2 pencil. You may underline, circle, or write in this test booklet to help you, but nothing marked in this test booklet will be scored. No additional paper may be used.

Mark only one answer for each question. Completely fill in the corresponding circle on your **Answer Document**. If you erase an answer, be sure to erase completely. Remember that if you skip a question in the test booklet, you need to skip the answer space for that question on the **Answer Document**. If you are not sure of an answer, mark your **best** choice.

A sample question is provided for you below.

Sample Multiple-Choice Question:

Marty wants to put 75 CDs into cases. Each case holds exactly 8 CDs. What is the **least** number of cases that Marty will need to hold all his CDs?

A 8

B 9

C 10

D 11

For this sample question, the correct answer is **C**. Circle **C** is filled in for the sample question on 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 go back and check your work in Part 1 of the test **ONLY**. Check to make sure that you have answered every question. Do **NOT** look at any other part of the test.

NOTE: The directions for Part 2 are the same as the above instructions, but with calculators allowed.

1 **N.ME.04.01:** Read and write numbers to 1,000,000; relate them to the quantities they represent; compare and order.

Complete compound inequality.

A incorrect value

B incorrect value

C correct

D incorrect value

2 **N.ME.04.03:** Understand the magnitude of numbers up to 1,000,000; recognize the place values of numbers and the relationship of each place value to the place to its right, e.g., 1,000 is 10 hundreds.

Determine value of a number in the thousands place.

A x,000 = x

B x,000 = x0

C x,000 = x00

D correct

3 **N.ME.04.04:** Find all factors of any whole number through 50, list factor pairs, and determine if a one-digit number is a factor of a given whole number.

Determine which pair of numbers is not a factor pair of given number.

A correct

B factor pair

C factor pair

D factor pair

4 **N.ME.04.04:** Find all factors of any whole number through 50, list factor pairs, and determine if a one-digit number is a factor of a given whole number.

List all factors of given number.

A 4 of 6 factors

B 5 factors, 1 non-factor

C 4 of 6 factors

D correct

5 **N.FL.04.35:** Know when approximation is appropriate and use it to check the reasonableness of answers; be familiar with common place-value errors in calculations.

Determine the place value.

A incorrect place value

B incorrect place value

C correct

D incorrect place value

6 **N.ME.04.05:** List the first ten multiples of a given one-digit whole number; determine if a whole number is a multiple of a given one-digit whole number.

Determine number which is not a multiple of given number.

A correct

B multiple

C multiple

D multiple

7 **N.MR.04.06:** Know that some numbers including 2, 3, 5, 7, and 11 have exactly two factors (1 and the number itself) and are called prime numbers.

Identify the prime number.

A composite

B correct

C composite

D composite

8 **N.MR.04.23:** Understand the relationships among halves, fourths and eighths, and among thirds, sixths, and twelfths.

Given a model of two-fourths, identify the equivalent model.

A models shows thirds

B correct

C models shows sixths

D model shows one-fourth

9 **N.MR.04.30:** Multiply fractions by whole numbers, using repeated addition and area or array models.

Identify equivalent value of given multiplication expression.

A $a \times 1/b = 1/b \times 1/b \times 1/b \times 1/b \times 1/b \times 1/b$

B correct

C $a \times 1/b = 1/a + 1/a + 1/a + 1/a$

D $a \times 1/b = a \times a \times a \times a$

10 **N.ME.04.09:** Multiply two-digit numbers by 2, 3, 4, and 5 using the distributive property, e.g., 21 x 3 = (1 + 20) x 3 = (1 x 3) + (20 x 3) = 3 + 60 = 63.

Multiply 2-digit number by 1-digit number using distributive property.

A correct

B incorrect numbers and operations

C correct numbers but multiplied instead of added

D correct numbers but added instead of multiplied

11 **N.ME.04.20:** Understand fractions as parts of a set of objects.

Determine fractional part of set of shaded shapes.

A 1/number of shaded shapes

B correct

C ratio of shaded shapes to non-shaded shapes

D complement

12 **N.FL.04.10:** Multiply fluently any whole number by a one-digit number, and a three-digit number by a two-digit number; for two-digit by one-digit multiplication, use distributive property to develop meaning for the algorithm.

Multiply two 2-digit whole numbers.

A added

B correct

C over by 100

D over by factor of 10

13 N.FL.04.10: Multiply fluently any whole number by a one-digit number, and a three-digit number by a two-digit number; for two-digit by one-digit multiplication, use distributive property to develop meaning for the algorithm.

Multiply 3-digit number by 1-digit number.

A incorrect product

B incorrect product

C incorrect product

D correct

14 N.FL.04.11: Divide numbers up to four-digits by one-digit numbers and by 10.

Divide 3-digit number by 1-digit number.

A incorrect quotient and remainder

B incorrect quotient and remainder

C correct

D correct quotient, incorrect remainder

15 N.FL.04.11: Divide numbers up to four-digits by one-digit numbers and by 10.

Divide 4-digit number by 1-digit number.

A incorrect quotient and remainder

B incorrect quotient and remainder

C incorrect quotient and remainder

D correct

16 N.FL.04.12: Find the value of the unknowns in equations such as a divided by 10 = 25; 125 divided by b = 25.

Calculate dividend in number sentence.

A quotient ÷ divisor

B incorrect dividend

C correct

D incorrect dividend

17 N.FL.04.12: Find the value of the unknowns in equations such as a divided by 10 = 25; 125 divided by b = 25.

Solve equation for divisor.

A dividend + quotient

B dividend - quotient

C over by factor of 10

D correct

18 N.ME.04.17: Locate tenths and hundredths on a number line.

Locate number in hundredths on number line.

A correct

B counted right to left from nearest whole number

C twice the given number

D hundredths = ones

19 N.ME.04.18: Read, write, interpret, and compare decimals up to two decimal places.

Order decimals from greatest to least.

A least to greatest

B mixed order

C correct

D mixed order

20 N.ME.04.18: Read, write, interpret, and compare decimals up to two decimal places.

Translate decimal to the word form.

A hundredths = ones

B hundredths = tenths

C hundredths = tenths

D correct

21 N.MR.04.19: Write tenths and hundredths in decimal and fraction forms, and know the decimal equivalents for halves and fourths.

Translate the fraction to a decimal.

A a/bc = 0.ba

B correct

C a/bc = a.bc

D a/bc = bc.a

22 N.MR.04.19: Write tenths and hundredths in decimal and fraction forms, and know the decimal equivalents for halves and fourths.

Translate the decimal to a fraction.

A 0.x = x + 1/10

B 0.x = x + 1/100

C 0.x = x/100

D correct

23 N.ME.04.20: Understand fractions as parts of a set of objects.

Calculate the fractional part of the marbles in a bag that are a given color.

A 1/number of correct color

B correct

C number of correct color/ number of other marbles

D 1/number of different colors

24 N.MR.04.23: Understand the relationships among halves, fourths and eighths, and among thirds, sixths, and twelfths.

Identify equivalent fraction.

A reciprocal

B incorrect fraction

C added one to numerator and denominator

D correct

25 N.MR.04.22: Locate fractions with denominators of 12 or less on the number line; include mixed numbers.

Given a mixed number, locate the icon on the given number line.

A correct fractional part, but omitted whole number

B counted right to left from nearest whole number

C correct whole number, incorrect fractional part

D correct

26 N.MR.04.30: Multiply fractions by whole numbers, using repeated addition and area or array models.

Match given area model to multiplication expression.

A complement

B correct number of models (wholes) but incorrect area/ shading

C incorrect number of models and area/shading

D correct

27 N.MR.04.23: Understand the relationships among halves, fourths and eighths, and among thirds, sixths, and twelfths.

Calculate numerator in equivalent fraction.

A correct

B incorrect numerator

C incorrect numerator

D multiplied denominators

28 N.ME.04.24: Know that fractions of the form m/n, where m is greater than n, are greater than 1 and are called improper fractions; locate improper fractions on the number line.

Identify fraction greater than 1.

A less than 1

B equal to 1

C correct

D less than 1

29 N.MR.04.25: Write improper fractions as mixed numbers, and understand that a mixed number represents the number of "wholes" and the part of a whole remaining, e.g., 5/4 = 1 + 1/4 = 1 1/4.

Translate improper fraction to mixed number.

A reciprocal

B used numerator of improper fraction as denominator of mixed number

C correct

D over by 1

30 N.MR.04.25: Write improper fractions as mixed numbers, and understand that a mixed number represents the number of "wholes" and the part of a whole remaining, e.g., 5/4 = 1 + 1/4 = 1 1/4.

Translate the mixed number to an improper fraction.

A incorrect fraction

B correct

C incorrect improper fraction

D a + b/c = ab/c

31 N.MR.04.26: Compare and order up to three fractions with denominators 2, 4, and 8, and 3, 6, and 12, including improper fractions and mixed numbers.

Order from least to greatest one improper fraction and two mixed numbers.

A greatest to least

B mixed order

C correct

D mixed order

32 N.MR.04.26: Compare and order up to three fractions with denominators 2, 4, and 8, and 3, 6, and 12, including improper fractions and mixed numbers.

List three fractions in order from least to greatest.

A greatest to least

B correct

C mixed order

D mixed order

33 N.MR.04.06: Know that some numbers including 2, 3, 5, 7, and 11 have exactly two factors (1 and the number itself) and are called prime numbers.

Identify the prime number.

A composite

B correct

C composite

D composite

34 N.MR.04.29: Find the value of an unknown in equations such as: 1/8 + x = 5/8 or 3/4 - y = 1/2.

Determine fractional addend in number sentence.

A known addend + sum

B incorrect addend

C correct

D incorrect addend

35 N.FL.04.34: Estimate the answers to calculations involving addition, subtraction, or multiplication.

Estimate solution to calculation involving subtraction of two 6-digit numbers.

A overestimate

B overestimate

C correct

D underestimate

36 N.ME.04.05: List the first ten multiples of a given one-digit whole number; determine if a whole number is a multiple of a given one-digit whole number.

List three multiples of a given number.

A 2 multiples, 1 non-multiple

B 1 multiple, 2 non-multiples

C correct

D 2 multiples, 1 non-multiple

37 M.UN.04.01: Measure using common tools and select appropriate units of measure.

Select unit of measure for volume.

A unit of length

B correct

C unit of area

D unit of mass

38 M.TE.04.10: Identify right angles and compare angles to right angles.

Identify right angle.

A acute angle

B correct

C obtuse angle

D straight angle

39 G.GS.04.02: Identify basic geometric shapes including isosceles, equilateral, and right triangles, and use their properties to solve problems.

Identify triangle given characteristics.

A incorrect triangle

B correct

C incorrect triangle

D incorrect triangle

40 G.SR.04.03: Identify and count the faces, edges, and vertices of basic three-dimensional geometric solids including cubes, rectangular prisms, and pyramids; describe the shape of their faces.

Identify number of edges in given shape.

A incorrect number of edges

B incorrect number of edges

C correct

D incorrect number of edges

41 G.TR.04.04: Recognize plane figures that have line symmetry.

Identify letter with line symmetry.

A does not have line symmetry

B does not have line symmetry

C does not have line symmetry

D correct

42 D.RE.04.03: Solve problems using data presented in tables and bar graphs, e.g., compare data represented in two bar graphs; read bar graphs showing two data sets.

Compare data in two bar graphs.

A minuend

B subtrahend

C incorrect difference

D correct

43 D.RE.04.01: Construct tables and bar graphs from given data.

Match the words to the table.

A incorrect table

B incorrect table

C correct

D incorrect table

44 D.RE.04.03: Solve problems using data presented in tables and bar graphs, e.g., compare data represented in two bar graphs; read bar graphs showing two data sets.

Interpret bar graph.

A incorrect statement

B incorrect statement

C correct

D incorrect statement

45 N.MR.04.13: Use the relationship between multiplication and division to simplify computations and check results.

Determine multiplication number sentence that can be used to check division number sentence.

A subtraction number sentence

B addition number sentence

C correct

D divisor × dividend = quotient

46 N.MR.04.14: Solve contextual problems involving whole number multiplication and division.

Multiply two 2-digit whole numbers in context.

A added

B incorrect product

C under by 10

D correct

47 N.ME.04.15: Read and interpret decimals up to two decimal places; relate to money and place value decomposition.

Determine shaded portion in decimal form of hundredths model.

A hundredths = thousandths

B correct

C hundredths = tenths

D hundredths = ones

48 N.ME.04.16: Know that terminating decimals represent fractions whose denominators are 10, 10 x 10, 10 x 10 x 10, etc., e.g., powers of 10.

Translate the decimal to a fraction.

A 0.0a = 1/a

B 0.0a = 1/a00

C 0.0a = a/10

D correct

49 N.ME.04.16: Know that terminating decimals represent fractions whose denominators are 10, 10 x 10, 10 x 10 x 10, etc., e.g., powers of 10.

Translate the fraction to a decimal.

A ab/100 = 0.0ab

B correct

C ab/100 = a.b

D ab/100 = ab

50 N.MR.04.21: Explain why equivalent fractions are equal, using models such as fraction strips or the number line, for fractions with denominators of 12 or less, or equal to 100.

Locate fraction on number line.

A incorrect location

B incorrect location

C correct

D incorrect location

51 N.MR.04.21: Explain why equivalent fractions are equal, using models such as fraction strips or the number line, for fractions with denominators of 12 or less, or equal to 100.

Given fraction strip, identify fraction strip with equivalent area.

A correct

B different area

C different area

D different area

52 M.PS.04.02: Give answers to a reasonable degree of precision in the context of a given problem.

Read scale in pounds.

A did not use scale

B incorrect weight

C correct

D incorrect

53 M.TE.04.05: Carry out the following conversions from one unit of measure to a larger or smaller unit of measure: meters to centimeters, kilograms to grams, liters to milliliters, hours to minutes, minutes to seconds, years to months, weeks to days, feet to inches, ounces to pounds (using numbers that involve only simple calculations.)

Translate time given in years to months.

A 1 year = 4 months

B 1 year = 7 months

C 1 year = 10 months

D correct

54 M.TE.04.05: Carry out the following conversions from one unit of measure to a larger or smaller unit of measure: meters to centimeters, kilograms to grams, liters to milliliters, hours to minutes, minutes to seconds, years to months, weeks to days, feet to inches, ounces to pounds (using numbers that involve only simple calculations.)

Translate seconds into minutes.

A 1 minute = 100 seconds

B correct

C 1 minute = 40 seconds

D 1 minute = 25 seconds

4th

5th

6th

7th

8th

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