



RELEASED ITEMS

**MATHEMATICS
GRADE 4**

Fall 2008

**MICHIGAN STATE BOARD OF EDUCATION
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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 trading 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**.

You will have at least 50 minutes to finish Part 1 of this test. You will be given additional time if necessary.

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.

- 1 Read and write numbers to 10,000
- A place value error
 - B place value error
 - C correct
 - D place value error
- 2 Which of the following shows “three thousand, four hundred six” written in standard form?
- A 3,000,406
 - B 3,406
 - C 30,064
 - D 3,046
- 3 Identify place value of digit in a number
- A place value error
 - B place value error
 - C place value error
 - D correct

- 4 Which of the following correctly represents 23,552?
- A $20,000 + 30,000 + 2,000 + 500 + 50 + 2$
 - B $2 + 3 + 5 + 5 + 2$
 - C $20,000 + 3,000 + 500 + 50 + 2$
 - D $20,000 + 3,000 + 500 + 2$
- 5 Add and subtract thru 999 w/regrouping, 9,999 w/o
- A added instead of subtracted
 - B did not regroup minuend
 - C subtracted minuend from subtrahend in ones place
 - D correct
- 6 Add $567 + 398$
- A 855
 - B 955
 - C 965
 - D 1,065

- 7 Estimate sum/difference of two 3-digit numbers
- A correct
 - B rounded sum up to next 100
 - C overestimate
 - D overestimate
- 8 Which number is closest to the sum of 585 and 411?
- A 100
 - B 300
 - C 900
 - D 1,000
- 9 Use \times and \div to show the inverse relationship
- A not in fact family
 - B not in fact family
 - C correct
 - D not in fact family

10 Which of the following is in the same fact family as $35 \div 7 = 5$?

A $5 + 7 = 12$

B $5 \times 7 = 35$

C $35 + 5 = 40$

D $70 \div 7 = 10$

11 Recognize multiplication and division situations

A divisor

B group size too small

C correct

D group size too large

12 Miguel read a book that was 54 pages long. He read 6 pages each day. Which number sentence below can be used to determine the total number of days it took Miguel to read the entire book?

A $54 - 6 = ?$

B $54 \div 6 = ?$

C $54 + 6 = ?$

D $54 \times 6 = ?$

13 Find products to 10 X 10 and related quotients

- A** added instead of multiplied
- B** used incorrect factor
- C** used incorrect factors
- D** correct

14 Multiply 3×9

- A** 3
- B** 6
- C** 12
- D** 27

15 Understand meaning & terminology of fractions

- A** reciprocal
- B** complement
- C** twice the correct fraction
- D** correct

16 Which of the following fractions has a numerator of 3?

A $\frac{1}{6}$

B $\frac{2}{3}$

C $\frac{3}{4}$

D $\frac{9}{10}$

17 Know benchmark temperatures & compare cooler, warmer

A benchmark measure with incorrect unit

B correct

C other benchmark with incorrect unit

D other benchmark

18 Which of the following is the boiling point of water?

A 112°F

B 180°F

C 200°F

D 212°F

19 Compose and decompose triangles and rectangles

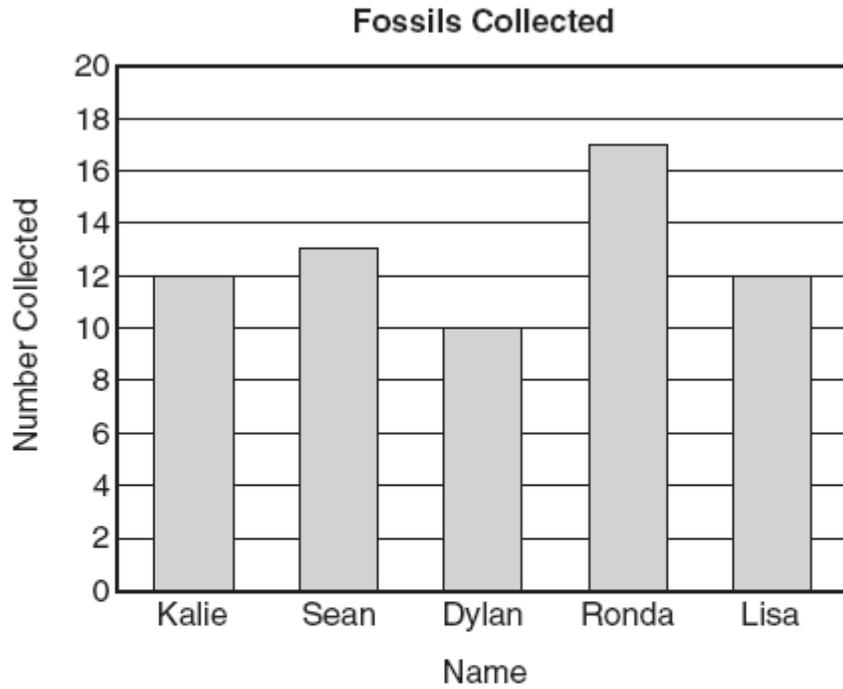
- A incorrect shape
- B correct
- C only one of three shapes used
- D only two of three shapes used

20 Which of the following groups of shapes can be arranged without gaps or overlapping to form the figure below?



- 21** Identify, describe, classify familiar 3-D solids
- A** incorrect shape
 - B** incorrect shape
 - C** correct
 - D** incorrect shape
- 22** Which shape has 12 edges, 8 vertices, and 6 faces?
- A** triangular prism
 - B** triangular pyramid
 - C** rectangular prism
 - D** rectangular pyramid
- 23** Read scales on axes, identify the max, min, range
- A** neither maximum nor minimum
 - B** neither maximum nor minimum
 - C** maximum
 - D** correct

24 The graph below shows the number of fossils collected by each of five friends on a field trip.



What is the range of the data represented on the graph?

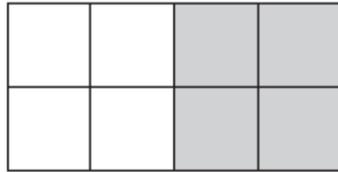
- A 20
- B 12
- C 10
- D 7

25 Which number goes in the blank to make the statement below true?

$$5,642 < \underline{\hspace{2cm}} < 6,633$$

- A 6,931
- B 5,610
- C 6,745
- D 5,841

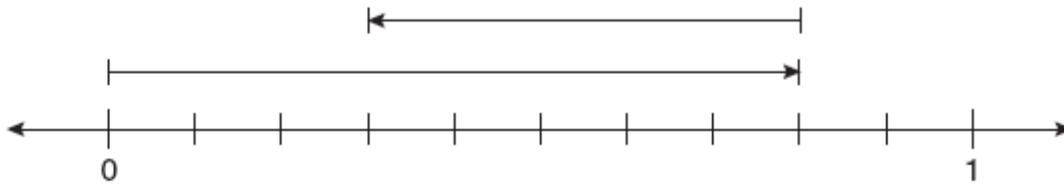
26 All the sections of the figure below are the same size and shape.



What fractional part of the figure is shaded?

- A $\frac{1}{2}$
- B $\frac{1}{4}$
- C $\frac{4}{4}$
- D $\frac{8}{4}$

27 Which number sentence is modeled on the number line below?



A $\frac{8}{10} - \frac{5}{10} = \frac{3}{10}$

B $\frac{8}{10} + \frac{5}{10} = \frac{13}{10}$

C $0 + \frac{8}{10} = \frac{8}{10}$

D $1 - \frac{5}{10} = \frac{5}{10}$

28 Which of the following can be used to represent the length of a piece of string?

- A ounces
- B square inches
- C inches
- D square feet

29 Which of the following *best* represents a line?

A



B



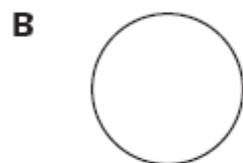
C



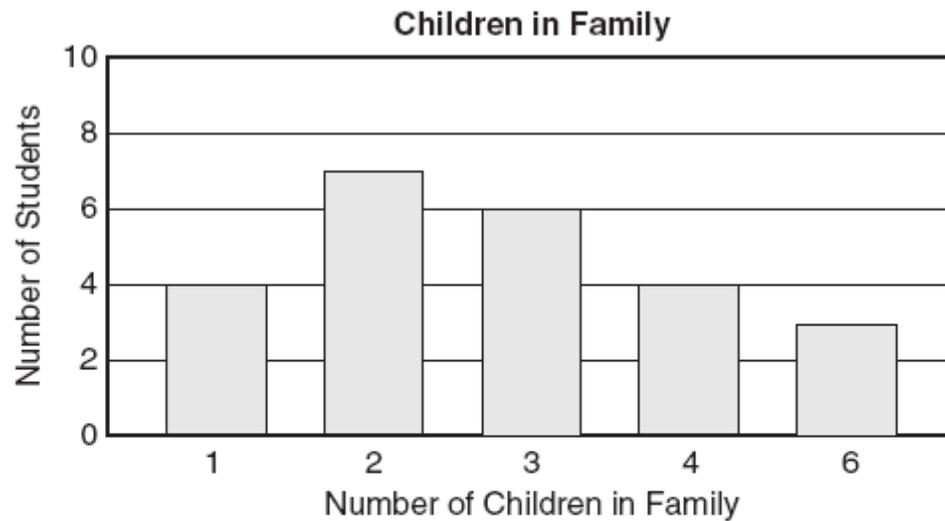
D



30 Which could be a side view of a rectangular prism?



- 31 A class collected data about the number of children in each student's family. The graph shows the results.



What is the total number of students with exactly 2 children in their family?

- A 1
- B 4
- C 6
- D 7

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.

- Use only a No. 2 pencil to mark your answer in your **Answer Document**.
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- 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 trading 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**.

You will have at least 35 minutes to finish Part 2 of this test. You will be given additional time if needed.

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.

- 32 Bill bought 4 packs of baseball cards. Each pack contained 9 cards. What was the total number of baseball cards Bill bought?
- A 5
 - B 13
 - C 32
 - D 36
- 33 Identify operation for problem and solve
- A correct
 - B did not regroup correctly
 - C subtracted minuend from subtrahend in tens place
 - D added instead of subtracted
- 34 Bonnie and 3 friends shared \$2.00 equally. What is the total amount each of them received?
- A \$6.00
 - B \$1.00
 - C \$0.75
 - D \$0.50

35 Understand meaning of 0.50 & 0.25 related to money

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

36 What time was it 3 hours ago if it is now 2:00 p.m.?

- A** 10:00 a.m.
- B** 11:00 a.m.
- C** 5:00 p.m.
- D** 11:00 p.m.

37 Use common measures of length, weight, time

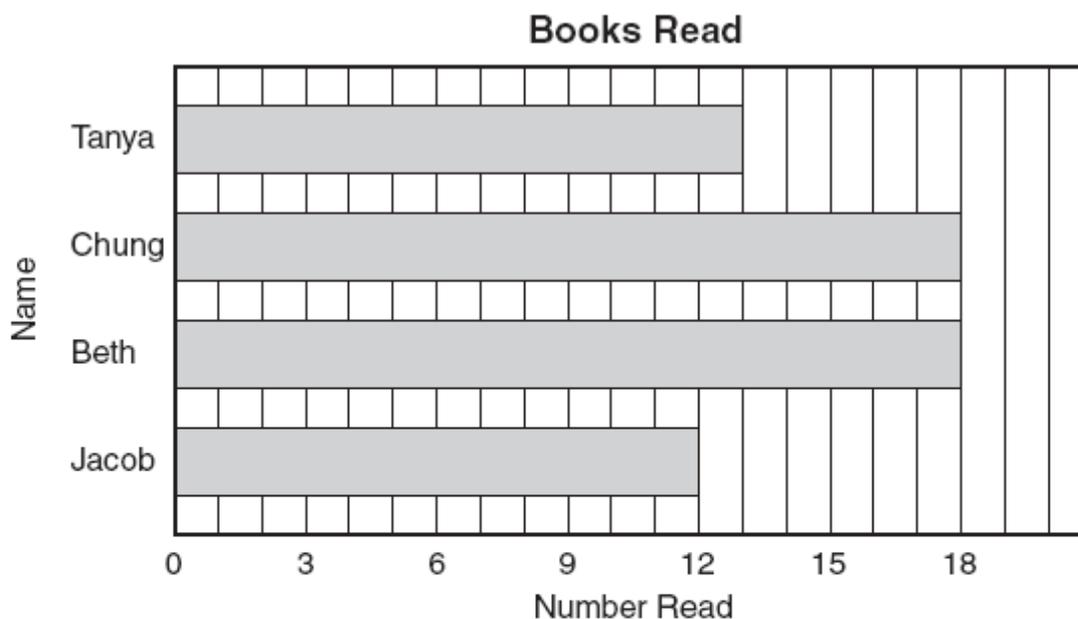
- A** incorrect unit
- B** incorrect unit
- C** incorrect unit
- D** correct

- 38** Maria and Tom watched a movie without a break. The movie started at 1:15 p.m. and ended at 2:45 p.m. How long was the movie?
- A** 1 hour 15 minutes
 - B** 1 hour 30 minutes
 - C** 1 hour 45 minutes
 - D** 4 hours
- 39** Measure in mixed units within measurement system
- A** multiplied feet by 12 to get yards
 - B** multiplied feet by 3 to get yards
 - C** incorrect conversion
 - D** correct
- 40** Which of the following is true?
- A** 25 meters $>$ 25 centimeters
 - B** 25 meters $<$ 25 centimeters
 - C** 250 centimeters $>$ 25 meters
 - D** 25 centimeters = 25 meters

- 41 Use relationships between sizes of standard units
- A less
 - B less
 - C correct
 - D equal
- 42 What is the perimeter of a rectangle that has a length of 6 inches and a width of 5 inches?
- A 11 inches
 - B 22 inches
 - C 30 inches
 - D 36 inches
- 43 Calculate area and perimeter of square & rectangle
- A length of six sides
 - B measure for area not perimeter
 - C correct
 - D length of two sides

- 44 Add $\$25.45 + \15.75
- A \$41.20
 - B \$40.20
 - C \$31.20
 - D \$30.20
- 45 Add and subtract money in dollars and cents
- A correct dollars, cents from subtrahend
 - B correct
 - C subtracted minuend from subtrahend with cents
 - D did not regroup dollars

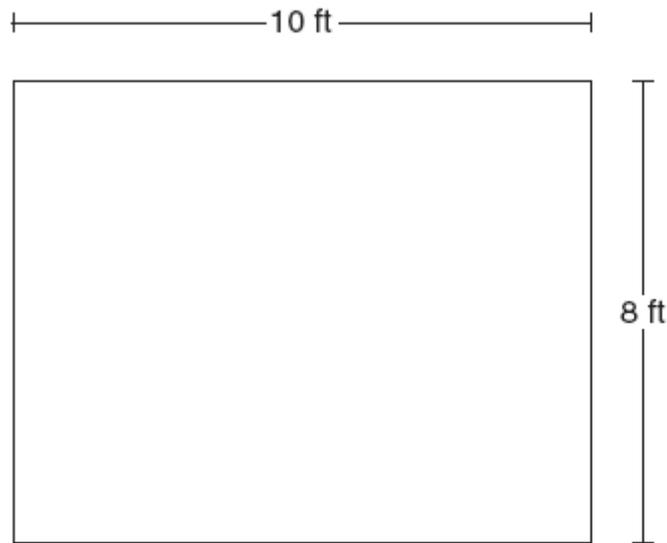
- 46 Tanya, Chung, Beth, and Jacob read books.



How many fewer books did Tanya read than Chung?

- A 18
 - B 13
 - C 6
 - D 5
- 47 Solve problems using bar graphs, compare graphs
- A incorrect comparison of two bars
 - B incorrect sum of two bars
 - C correct
 - D incorrect comparison of two bars

- 48 The length and width of Karen’s rectangular bedroom floor are shown below.



What is the area of the floor?

- A 18 square feet
 - B 36 square feet
 - C 72 square feet
 - D 80 square feet
- 49 Which shape below never has parallel sides?
- A square
 - B rectangle
 - C hexagon
 - D triangle

50 James started reading at 10:30 a.m. He read for 2 hours and 15 minutes without stopping. At what time did he finish reading?

- A 10:45 a.m.
- B 12:30 p.m.
- C 12:45 p.m.
- D 1:15 a.m.

51 Which of the following is closest to the perimeter of the shape below?
(Perimeter = distance around)



- A 6 inches
- B 8 inches
- C 6 square inches
- D 8 square inches

52 Which of the following lists the fractions in order from *least* to *greatest*?

A $\frac{1}{2}$, $\frac{3}{4}$, $\frac{2}{8}$

B $\frac{2}{8}$, $\frac{3}{4}$, $\frac{1}{2}$

C $\frac{3}{4}$, $\frac{1}{2}$, $\frac{2}{8}$

D $\frac{2}{8}$, $\frac{1}{2}$, $\frac{3}{4}$

53 What number goes in the box to make the number sentence below true?

$$9 \times \square = 72$$

A 6

B 7

C 8

D 9

54 Mrs. Walker has 31 students in her class. She wants to divide them into teams of 4 for a writing project. What is the greatest number of teams of 4 she could form?

A 2

B 4

C 7

D 10

Scoring Key: Part 1

Item No.	Correct Answer	GLCE	Type	Description
1	C	N.ME.03.01	Core	Read and write numbers to 10,000
2	B	N.ME.03.01	Core	Read and write numbers to 10,000
3	D	N.ME.03.02	Core	Identify place value of digit in a number
4	C	N.ME.03.02	Core	Identify place value of digit in a number
5	D	N.FL.03.06	Core	Add and subtract thru 999 w/regrouping, 9,999 w/o
6	C	N.FL.03.06	Core	Add and subtract thru 999 w/regrouping, 9,999 w/o
7	A	N.FL.03.07	Core	Estimate sum / difference of two 3-digit numbers
8	D	N.FL.03.07	Core	Estimate sum / difference of two 3-digit numbers
9	C	N.MR.03.09	Core	Use \times and \div to show the inverse relationship
10	B	N.MR.03.09	Core	Use \times and \div to show the inverse relationship
11	C	N.MR.03.10	Core	Recognize multiplication and division situations
12	B	N.MR.03.10	Core	Recognize multiplication and division situations
13	D	N.FL.03.11	Core	Find products to 10 X 10 and related quotients
14	D	N.FL.03.11	Core	Find products to 10 X 10 and related quotients
15	D	N.ME.03.16	Core	Understand meaning & terminology of fractions
16	C	N.ME.03.16	Core	Understand meaning & terminology of fractions
17	B	M.UN.03.04	Core	Know benchmark temperatures & compare cooler, warmer
18	D	M.UN.03.04	Core	Know benchmark temperatures & compare cooler, warmer
19	B	G.SR.03.05	Core	Compose and decompose triangles and rectangles
20	C	G.SR.03.05	Core	Compose and decompose triangles and rectangles
21	C	G.GS.03.06	Core	Identify, describe, classify familiar 3-D solids
22	C	G.GS.03.06	Core	Identify, describe, classify familiar 3-D solids
23	D	D.RE.03.02	Core	Read scales on axes. Identify the max, min, range

Item No.	Correct Answer	GLCE	Type	Description
24	D	D.RE.03.02	Core	Read scales on axes. Identify the max, min, range
25	D	N.ME.03.03	Extended	Compare and order numbers up to 10,000.
26	A	N.ME.03.17	Extended	Recognize, name and use equivalent fractions
27	A	N.MR.03.20	Extended	Model +, - of fractions on number line
28	C	M.UN.03.07	Extended	Distinguish between units of length and area in cont
29	D	G.GS.03.01	Extended	Identify points, line segments, lines and distance
30	A	G.GS.03.04	Extended	Identify, describe, compare, classify 2-D shapes
31	D	D.RE.03.01	Extended	Read & interpret horizontal and vertical bar graphs

Scoring Key: Part 2

Item No.	Correct Answer	GLCE	Type	Description
32	D	N.MR.03.15	Core	Identify operation for problem and solve
33	A	N.MR.03.15	Core	Identify operation for problem and solve
34	D	N.ME.03.21	Core	Understand meaning of 0.50 & 0.25 related to money
35	C	N.ME.03.21	Core	Understand meaning of 0.50 & 0.25 related to money
36	B	M.UN.03.01	Core	Use common measures of length, weight, time
37	D	M.UN.03.01	Core	Use common measures of length, weight, time
38	B	M.UN.03.02	Core	Measure in mixed units within measurement system
39	D	M.UN.03.02	Core	Measure in mixed units within measurement system
40	A	M.UN.03.03	Core	Use relationships between sizes of standard units
41	C	M.UN.03.03	Core	Use relationships between sizes of standard units
42	B	M.UN.03.05	Core	Calculate area and perimeter of square & rectangle
43	C	M.UN.03.05	Core	Calculate area and perimeter of square & rectangle
44	A	M.PS.03.11	Core	Add and subtract money in dollars and cents
45	B	M.PS.03.11	Core	Add and subtract money in dollars and cents

Scoring Key: Part 2 (Continued)

Item No.	Correct Answer	GLCE	Type	Description
46	D	D.RE.03.03	Core	Solve problems using bar graphs, compare graphs
47	C	D.RE.03.03	Core	Solve problems using bar graphs, compare graphs
48	D	M.PS.03.13	Extended	Solve problems about perimeter/area of rectangles
49	D	G.GS.03.02	Future	Identify perpendicular lines and parallel lines
50	C	M.PS.03.10	Future	Add and subtract lengths, weights and times
51	B	M.TE.03.09	Future	Estimate perimeter & area of square & rectangle
52	D	N.ME.03.18	Future	Place & compare fractions on number line
53	C	N.MR.03.12	Future	Find solutions to open sentences that use x and \div
54	C	N.MR.03.14	Future	Solve division problems involving remainders

Updated 2/10/09