Ohio Achievement Test
Grade 5 Mathematics

May 2007

Answer Key
and
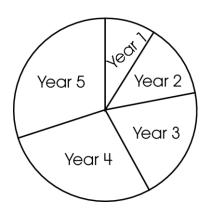# Scoring Guidelines

Grade 5 Mathematics
Answer Key
May 2007

Item No.	Type	Content Standard	Content Standard Benchmark	Key
1	Multiple Choice	Measurement	A	Not for public release
2	Multiple Choice	Number, Number Sense and Operations	I	C
3	Multiple Choice	Data Analysis and Probability	D	D
4	Multiple Choice	Geometry and Spatial Sense	A	B
5	Short Answer	Patterns, Functions, and Algebra	L	Not for public release
6	Multiple Choice	Data Analysis and Probability	K	B
7	Multiple Choice	Number, Number Sense and Operations	B	Not for public release
8	Multiple Choice	Measurement	C	D
9	Multiple Choice	Patterns, Functions, and Algebra	D	Not for public release
10	Short Answer	Number, Number Sense and Operations	H	Not for public release
11	Multiple Choice	Geometry and Spatial Sense	J	Not for public release
12	Multiple Choice	Data Analysis and Probability	E	C
13	Multiple Choice	Measurement	A	D
14	Multiple Choice	Number, Number Sense and Operations	A	A
15	Short Answer	Geometry and Spatial Sense	G	Not for public release
16	Multiple Choice	Patterns, Functions, and Algebra	K	C
17	Multiple Choice	Data Analysis and Probability	I	Not for public release
18	Multiple Choice	Number, Number Sense and Operations	I	Not for public release
19	Multiple Choice	Geometry and Spatial Sense	D	C
20	Extended Response	Measurement	C	Not for public release
21 – 26	Field test questions not used in student score			
27	Multiple Choice	Patterns, Functions, and Algebra	F	C
28	Multiple Choice	Number, Number Sense and Operations	D	A
29	Short Answer	Patterns, Functions, and Algebra	C	Not for public release
30	Multiple Choice	Measurement	B	C
31	Multiple Choice	Geometry and Spatial Sense	B	B
32	Multiple Choice	Number, Number Sense and Operations	B	B
33	Extended Response	Data Analysis and Probability	A	E
34	Multiple Choice	Measurement	G	Not for public release
35	Multiple Choice	Number, Number Sense and Operations	D	Not for public release
36	Multiple Choice	Patterns, Functions, and Algebra	B	Not for public release
37	Multiple Choice	Measurement	A	Not for public release
38	Short Answer	Geometry and Spatial Sense	J	2 pt. rubric
39	Multiple Choice	Number, Number Sense and Operations	B	Not for public release
40	Multiple Choice	Patterns, Functions, and Algebra	B	Not for public release
41	Multiple Choice	Data Analysis and Probability	J	Not for public release
42	Short Answer	Number, Number Sense and Operations	I	2 pt. rubric
43	Multiple Choice	Geometry and Spatial Sense	C	Not for public release
44	Multiple Choice	Number, Number Sense and Operations	I	Not for public release
45	Multiple Choice	Patterns, Functions, and Algebra	E	Not for public release
46	Multiple Choice	Number, Number Sense and Operations	I	B

Limited = 0-18; Basic = 19-24; Proficient = 25-32; Accelerated = 33-36; Advanced = 37-52
Multiple Choice = 1 point; Short Answer = 2 points; Extended Response = 4 points

33.   The height of a maple tree is recorded for each of 5 years in the table shown.

Year	1	2	3	4	5
Tree Height (in feet)	4	6	9	13	14

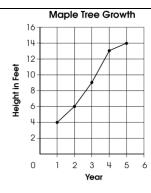Chris displays the data in the circle graph shown.

In your **Answer Document**, explain why Chris' circle graph is not an appropriate way to display the data.

Create an appropriate graph to display the data shown in the table. Be sure to give your graph a title, labels and a scale.

Explain why your graph is a better way to display the data. (**4 points**)

Scoring Guidelines

Points	Student Response
4 point	The focus of this task is explaining why a circle graph is not an appropriate graph to display the given data and creating a graph that is appropriate for the type of data to be displayed. The response provides an adequate explanation for why Chris' circle graph is not an appropriate way to display the data. The response also provides an accurate line graph displaying the data in the table complete with a title, labels and a scale, as well as an adequate explanation of why the line graph is a better way to display the data. **NOTE**: An acceptable reason for why Chris' graph is not appropriate is that there are no percents used in the data. **Exemplar Response:** Chris' circle graph is not appropriate since there is no part to whole relationship with the maple tree data.

Maple Tree Growth

The line graph is better since it shows growth over time.

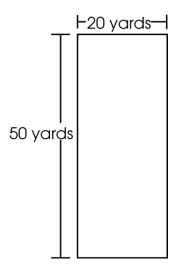| 3 point	The response provides evidence of explaining why a circle graph is not an appropriate graph to display the given data and creating a graph that is appropriate for the type of data to be displayed; however, the solution may contain a slight error, a flaw or a vague explanation. **Sample Response:** The response may: • Provide an accurate line graph with an adequate explanation of why this is a good way to represent this data. Chris' graph is addressed inappropriately. • State an adequate reason why Chris' graph is inappropriate and state an adequate reason why a line graph is better. The line graph may be missing labels, a title and/or have only 4 data points correctly plotted (minor errors).
2 point	The response provides partial evidence of explaining why a circle graph is not an appropriate graph to display the given data and creating a graph that is appropriate for the type of data to be displayed; however, the solution is incomplete and/or contains minor flaws. **Sample Response:** The response may: • Provide an adequate reason why Chris' graph is inappropriate and state an adequate reason why a line graph is better but have a line graph with multiple errors, such as plotting the data. • Provide an accurate line graph with an inadequate or missing explanation of why this is a good way to represent these data. Chris's graph is not addressed or is incorrectly addressed.
1 point	The response provides minimal evidence of explaining why a circle graph is not an appropriate graph to display the given data and creating a graph that is appropriate for the type of data to be displayed. The response has major flaws and errors in reasoning. **Sample Response:** The response may: • Provide a line graph that has multiple errors such as errors in plotting the data and does not address Chris' graph or why the line graph is a better way to display the data. • Provide an adequate reason why Chris' graph is inappropriate. • Provide an adequate reason why a line graph is a better graph to be used with this data.

0 point	The response provides inadequate evidence of explaining why a circle graph is not an appropriate graph to display the given data and creating a graph that is appropriate for the type of data to be displayed. The response provides major flaws in explanations or irrelevant information. **Sample Response:** The response may: • Provide an inappropriate graph, such as a bar graph. • Provide an inadequate reason such as, "Chris' graph is a great graph for these data." • Restate the information provided in the item. • Be blank or state irrelevant information.

38. Joel's field is 20 yards wide and 50 yards long, as shown.

He wants to divide his field into two congruent rectangular fields, one for corn and the other for strawberries.

In your **Answer Document**, determine the length and the width of the two new fields.

Explain how you know that the two new fields are congruent. (**2 points**)

Scoring Guidelines

Points	Student Response
2 point	The focus of this task is using properties of congruent rectangles to solve a problem. The response provides a correct length and width for both of the congruent fields with an adequate explanation. **Exemplar Response:** The two new fields will be 20 yards wide and 25 yards long because half of 50 is 25. They are congruent because they are both rectangles with the same length and same width. The two new fields will be 10 yards wide and 50 yards long because I cut the width in half. They are congruent because they are exactly the same size and same shape.
1 point	The response shows partial evidence of using properties of congruent rectangles to solve a problem; however, the solution may be incomplete or slightly flawed. **Sample Response:** The response may: • State that he should divide the length in half and keep the width the same but not provide the new measurements or an explanation. • Provide an accurate length and width for the two congruent fields without an explanation. • Provide a length of 25 yards and a width of 10 yards.
0 point	The response provides inadequate evidence of using properties of congruent rectangles to solve a problem. The response provides major flaws in explanations or irrelevant information. **Sample Response:** The response may: • State that the new field will be 20 yards wide and 50 yards long. • Restate the information provided in the item. • Be blank or give irrelevant information.

42.   A class needs 64 brownies for a bake sale. Mike brings 28 brownies.

In your **Answer Document**, write two number sentences using different operations to find the number of brownies the class still needs for the bake sale. (**2 points**)

Scoring Guidelines

Points	Student Response
2 point	The focus of this task is identifying and using relationships between operations to solve problems. The response provides two correct number sentences using different operations. **Exemplar Response:** • 28 + n = 64 and 64 – 28 = n, where n is the number of brownies still needed for the bake sale. • 28 + n = 64 and 64 – n = 28. • 64 – 28 = 36 and 28 + 36 = 64.

1 point	The response provides partial evidence of identifying and using relationships between operations to solve problems; however, the solution may be incomplete or slightly flawed.
	
	Sample Response:
	The response may:
	   • Provide one correct number sentence, but the other may be missing or have flaws.
	   • Provide two correctly related number sentences but have computational errors.

0 point	The response provides inadequate evidence of identifying and using relationships between operations to solve problems. The response provides major flaws in reasoning or irrelevant information.
	
	Sample Response:
	The response may:
	   • Provide number sentences that are incorrect, such as: 64 × 28 and 28 × 64.
	   • Be blank or provide unrelated statements.
	   • Copy information from the stem.