# Ohio Achievement Test
# Grade 6 Mathematics

# May 2008

# Answer Key
# and
# Scoring Guidelines

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| Item No. | Type | Content Standards | Content Standard Benchmark | Key |
|---|---|---|---|---|
| 1 | Multiple Choice | Number, Number Sense, and Operations | I | Not for Public Release |
| 2 | Multiple Choice | Geometry and Spatial Sense | J | B |
| 3 | Multiple Choice | Patterns, Functions, and Algebra | E | C |
| 4 | Multiple Choice | Data Analysis and Probability | E | Not for Public Release |
| 5 | Multiple Choice | Data Analysis and Probability | K | Not for Public Release |
| 6 | Short Answer | Number, Number Sense, and Operations | E | 2 pt rubric |
| 7 | Multiple Choice | Patterns, Functions, and Algebra | M | Not for Public Release |
| 8 | Multiple Choice | Number, Number Sense, and Operations | D | A |
| 9 | Multiple Choice | Measurement | E | A |
| 10 | Multiple Choice | Number, Number Sense, and Operations | E | Not for Public Release |
| 11 | Extended Response | Geometry and Spatial Sense | I | 4 pt rubric |
| 12 | Multiple Choice | Patterns, Functions, and Algebra | C | Not for Public Release |
| **13 – 18** | **Field Test Items Not Used in Student Score** | | | |
| 19 | Multiple Choice | Data Analysis and Probability | A | A |
| 20 | Multiple Choice | Measurement | G | D |
| 21 | Short Answer | Number, Number Sense, and Operations | D | Not for Public Release |
| 22 | Multiple Choice | Geometry and Spatial Sense | D | Not for Public Release |
| 23 | Multiple Choice | Data Analysis and Probability | F | Not for Public Release |
| 24 | Multiple Choice | Number, Number Sense, and Operations | H | C |
| 25 | Multiple Choice | Data Analysis and Probability | D | Not for Public Release |
| 26 | Extended Response | Patterns, Functions, and Algebra | A | Not for Public Release |
| 27 | Multiple Choice | Geometry and Spatial Sense | A | C |
| 28 | Multiple Choice | Number, Number Sense, and Operations | C | B |
| 29 | Multiple Choice | Measurement | F | Not for Public Release |
| 30 | Multiple Choice | Geometry and Spatial Sense | F | Not for Public Release |
| 31 | Short Answer | Patterns, Functions, and Algebra | M | 2 pt rubric |
| 32 | Multiple Choice | Measurement | C | C |
| 33 | Multiple Choice | Number, Number Sense, and Operations | I | B |
| 34 | Multiple Choice | Geometry and Spatial Sense | G | A |
| 35 | Multiple Choice | Patterns, Functions, and Algebra | J | Not for Public Release |
| 36 | Short Answer | Measurement | G | Not for Public Release |
| 37 | Multiple Choice | Number, Number Sense, and Operations | G | Not for Public Release |
| 38 | Multiple Choice | Patterns, Functions, and Algebra | B | Not for Public Release |
| 39 | Multiple Choice | Measurement | C | C |
| 40 | Multiple Choice | Number, Number Sense, and Operations | H | Not for Public Release |
| 41 | Short Answer | Data Analysis and Probability | E | Not for Public Release |
| 42 | Multiple Choice | Number, Number Sense, and Operations | D | Not for Public Release |
| 43 | Multiple Choice | Measurement | F | Not for Public Release |
| 44 | Multiple Choice | Data Analysis and Probability | E | B |
| 45 | Multiple Choice | Number, Number Sense, and Operations | I | C |

Limited = 0-13; Basic = 14-19; Proficient = 20-28; Accelerated = 29-34; Advanced = 35-50
Multiple Choice = 1 point; Short Answer = 2 points; Extended Response = 4 points

**6.** In your **Answer Document**, simplify the expression 10 – 4 ÷ 0.5 + 4 to find its value.

Explain how you used order of operations to simplify the expression. (**2 points**)

**Scoring Guidelines**

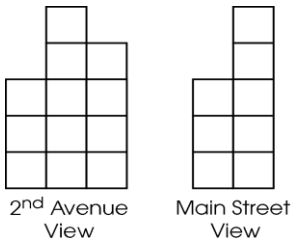
| Points | Student Response |
|---|---|
| 2 point | The focus of this task is using and explaining the order of operations, including the use of rational numbers, to simplify numerical expressions. The response provides adequate work that supports the correct value with an explanation for ordering the operations.<br><br>**NOTE**: The original expression does not need to be rewritten.<br><br>• $10-4\div0.5+4$ I divided first because division comes first. $10-8+4$<br>• I subtracted next because addition and subtraction are at the same level, but subtraction comes first in this expression. $2+4$<br>• Finally, I added to get the answer. $6$<br>• I went in this order because of order of operations: divide, subtract, and then add. My solution was 6. |
| 1 point | The response shows partial evidence of using and explaining the order of operations, including the use of rational numbers, to simplify numerical expressions; however, the solution may be incomplete or slightly flawed.<br><br>The response may:<br>• Show one calculation error but the order of operations is correctly applied.<br>• Show that the expression is equal to 6 with an inadequate explanation (e.g., "PEMDAS") or no explanation. |
| 0 point | The response provides inadequate evidence of using and explaining the order of operations, including the use of rational numbers, to simplify numerical expressions. The response provides major flaws in reasoning or irrelevant information.<br><br>The response may:<br>• Provide a response that does not follow the order of operations.<br>• Restate the information provided in the item.<br>• Be blank or give irrelevant information. |

**11.** In your **Answer Document**, sketch the view as it would appear from 2nd Avenue.

Then, sketch the view as it would appear from Main Street.

Finally, explain how the view from 2nd Avenue is different from the view from 3rd Avenue. (**4 points**)

**Scoring Guidelines**

| Points | Student Response |
|---|---|
| 4 point | The focus of this task is sketching two-dimensional views of three-dimensional objects and explaining the relationship of opposite views. The response provides two sketches as seen from 2nd Avenue and Main Street and an explanation of the relationship between the views as seen from 2nd and 3rd Avenues.<br>  <br><br>The views from 2nd and 3rd Avenues are mirror images. |
| 3 point | The response provides evidence of sketching two-dimensional views of three-dimensional objects and explaining the relationship of opposite views; however, the solution may contain a slight error, a flaw or a vague explanation.<br>The response may:<br>• Provide the two sketches as seen from 2nd Avenue or Main Street with a slight error in sketching one of the views but be correct in the other view and provide an explanation that the opposite views would be mirror images or reflections.<br>• Provide correct sketches as seen from 2nd Avenue or Main Street with a vague explanation. |
| 2 point | The response provides partial evidence of sketching two-dimensional views of three-dimensional objects and explaining the relationship of opposite views; however, the solution is incomplete and/or contains minor flaws.<br>The response may:<br>• Only provide two correct sketches as seen from 2nd Avenue and Main Street.<br>• Provide a correct description of the relationship between the views as seen from 2nd or 3rd Avenues. |
| 1 point | The response provides minimal evidence of sketching two-dimensional views of three-dimensional objects and explaining the relationship of opposite views. The response contains major flaws and the explanation is incomplete or missing.<br>The response may:<br>• Provide only one correct sketch as seen from either 2nd Avenue or Main Street.<br>• Provide two partially correct sketches as seen from 2nd Avenue or Main Street. |
| 0 point | The response provides inadequate evidence of sketching two-dimensional views of three-dimensional objects and explaining the relationship of opposite views. The response provides major flaws in explanations or irrelevant information.<br>The response may:<br>• Provide only one incorrect view.<br>• Restate the information provided in the item.<br>• Be blank or give irrelevant information. |

**31.** In your **Answer Document**, explain who is hiking at a constant rate and who is hiking at a changing rate. Use the data in the table to support your answer. (**2 points**)

**Scoring Guidelines**

| Points | Student Response |
|---|---|
| 2 point | The focus of this task is determining constant or varying rates of change and comparing them. The response provides a complete and correct explanation of who is hiking at a constant rate and who is hiking at a changing rate by using the data in the table.<br><br>**Sample Response**:<br>Denise is hiking at a constant rate because every 10 minutes she is hiking 300 meters. Javier is hiking at a changing rate because he travels 200 meters in the first 10 minutes, 300 meters in the second 10 minutes, 500 meters in the third 10 minutes and 200 meters in the last 10 minutes. |
| 1 point | The response provides partial evidence of determining constant or varying rates of change and comparing them. The response provides work with minor errors or flaws **OR** vague explanation.<br><br>**Sample Response**:<br>The response may:<br>• State that Denise is hiking at a constant rate and Javier is hiking at a changing rate without an explanation.<br>• State that Denise is hiking at a constant rate because each in 10-minute interval she goes the same distance. The response does not include Javier's hiking. |
| 0 point | The response provides inadequate evidence of determining constant or varying rates of change and comparing them. The response provides major flaws in reasoning or irrelevant information.<br><br>**Sample Response**:<br>The response may:<br>• State that Denise and Javier are both walking at a constant rate because they started and stopped at the same time and distance.<br>• Be blank or state unrelated statements.<br>• Recopy information from the stem. |