**4th Mathematics Ohio Graduation Test**
**Geometry and Spatial Standard**

## Benchmark A

<table>
<tr><td>Question 5</td><td>March 2006</td><td></td></tr>
<tr><td></td><td></td><td>
Scoring Guidelines
<table>
<tr><th>Points</th><th>Student Response</th></tr>
<tr><td>2</td><td>The focus of the task is describing and comparing three-dimensional objects using their attributes. The response provides at least one mathematically relevant similarity and one mathematically relevant difference between a cone and a cylinder.<br><br>Sample Correct Responses:<br>• A cone and a cylinder are alike because both are 3-dimensional. They are different because the cylinder has circles at both ends the cone narrows to a point at one end.<br>• They both have a circle for a base. The cone has two faces but cylinder has three faces.</td></tr>
<tr><td>1</td><td>The response shows partial evidence of describing and comparing thre dimensional objects using their attributes; however, the solution may be incomplete or slightly flawed.<br>For example, the response may:<br>• State an accurate similarity but not adequately state a difference<br>• State that the volume of the cone is less than the volume of the cylinder but not adequately state a similarity.<br>• State an adequate difference but state a similarity that is not true all cones and cylinders. For example, state the figures are the sa height. (this is a measurement difference not a geometrical difference)</td></tr>
<tr><td>0</td><td>The response provides inadequate evidence of an understanding of describing and comparing three-dimensional objects using their attribut The response provides an explanation with major flaws and errors of reasoning.<br>For example, the response may:<br>• State that the cone could be put on top of the cylinder.<br>• Be blank or state unrelated statements.<br>• Recopy information from the stem.</td></tr>
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<tr><td>Question 9</td><td>Spring 2007</td><td>C</td></tr>
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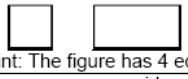
## Benchmark B

| | | |
|---|---|---|
| Question 42 | May 2009 | D |
| Question 1 | March 2008 | C |
| Question 21 | March 2006 | A |
| Question 26 | March 2006 | B |

## Benchmark E

| Question | March |
|---|---|
| 10 | 2008 |

**Scoring Guidelines**

| Points | Student Response |
|---|---|
| 4 point text | The focus of this task is drawing two-dimensional figures using their attributes. The response provides four correct figures with at least one pair of parallel sides AND two correct figures that also have four right angles. The response also provides a description of one of the two shapes with the correct name.<br>  <br>•<br>  <br>Hint: The figure has 4 equal sides; the figure is a square. |
| 3 point | The response provides evidence of drawing two-dimensional figures using their attributes; however, the solution may contain a slight error, a flaw or a vague explanation.<br>For example, the response may:<br>• Correctly name all of the figures instead of sketching them and provide a correct third hint that describes only one of the two remaining shapes with the correct name of the shape.<br>• Correctly sketch all of the figures and provide a correct third hint that describes only one of the two remaining shapes; but sketches the final shape instead of naming it.<br>• Provide three correct sketches of quadrilaterals, two figures that match both rules, and an appropriate third hint along with the correct name of the shape. |
| 2 point | The response provides partial evidence of drawing two-dimensional figures using their attributes; however, the solution is incomplete and/or contains minor flaws.<br>For example, the response may:<br>• Provide four sketches of figures but one of them is incorrect; also provide two sketches based on the second hint, but one may be incorrect; the final hint is based on the correctly drawn figure and includes the correct name of the shape.<br>• Only provide two correct sketches based on the second hint, and an appropriate third hint along with the correct name of the shape. |
| 1 point | The response provides minimal evidence of drawing two-dimensional figures using their attributes. The response contains major flaws and errors in reasoning.<br>For example, the response may:<br>• Only provide sketches of the first four figures.<br>• Only provide sketches of the two figures based on the second hint.<br>• Provide the third hint and sketch the shape. |
| 0 point | The response provides inadequate evidence of drawing two-dimensional figures using their attributes. The response provides major flaws in explanations or irrelevant information.<br>For example, the response may:<br>• Sketch the incorrect shapes.<br>• Restate the information provided in the item.<br>• Be blank or state irrelevant information. |

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<td>Question 10</td>
<td>March 2006</td>
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Scoring Guidelines
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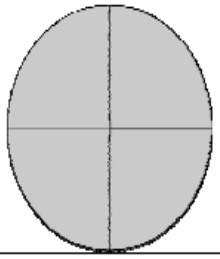
<tr><th>Points</th><th>Student Response</th></tr>
<tr><td>2</td><td>The focus of this task is identifying and describing equivalent forms of fractions that are equal to one. The response provides a fraction equal to one and provides adequate support to show or explain why the fraction is equal to one.<br>• $\frac{4}{4}$. It is equal to one because the numerator is the number of parts and the denominator is the number of parts in all. Since they are both 4 it means you have 4 parts and there are 4 parts in all, so it's equal to one.<br>• $\frac{4}{4}$  </td></tr>
<tr><td>1</td><td>The response shows partial evidence of identifying and describing equivalent forms of fractions that are equal to one; however, the solution is incomplete or slightly flawed.<br>For example, the response may:<br>• Provide a fraction equal to one, but give no or a flawed explanation of why it is equal to one.<br>• State an appropriate explanation but does not indicate a fraction. E.g., a fraction is equal to one when the numerator is equal to the denominator.</td></tr>
<tr><td>0</td><td>The response provides inadequate evidence of an understanding of identifying and describing equivalent forms of fractions that are equal to one. The response provides an explanation with major flaws and errors of reasoning.<br>For example, the response may:<br>• State a fraction that is not equal to one and does not provide an adequate explanation. E.g., $\frac{4}{4}$<br>• Be blank or state unrelated statements.<br>• Recopy information from the stem.</td></tr>
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<td>Question 43</td>
<td>March 2006</td>
<td>B</td>
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## Benchmark F

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<td>Question 44</td>
<td>May 2009</td>
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Scoring Guidelines
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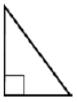
<tr><th>Points</th><th>Student Response</th></tr>
<tr><td>2 point</td><td>Sample Correct Responses:<br>• A right triangle looks like this  . An equilateral triangle looks like this  . It doesn't have a right angle.<br>• It's not possible to draw a right equilateral triangle. The side opposite a right angle is longer than the other two sides. An equilateral triangle has all sides equal.<br><br>The focus of this task is using attributes to determine if a right equilateral triangle can be drawn. The response uses words or a drawing to show why a right triangle cannot be equilateral.</td></tr>
<tr><td>1 point</td><td>The response shows partial evidence of using attributes to determine if a right equilateral triangle can be drawn; however, the response may be incomplete or slightly flawed.<br><br><u>1 point sample answer</u><br>For example, the response may:<br>• Provide an adequate explanation of an equilateral and/or right triangle without determining whether a right equilateral triangle can be drawn.</td></tr>
<tr><td>0 point</td><td>The response provides inadequate evidence of using attributes to determine if a right equilateral triangle can be drawn. The response provides a solution with major flaws or errors in reasoning.<br><br><u>0 point sample answer</u><br>For example, the response may:<br>• State that it is possible, but give no explanation.<br>• Restate the information provided in the item.<br>• Be blank or give irrelevant information.</td></tr>
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<td>Question 38</td>
<td>March 2006</td>
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Scoring Guidelines
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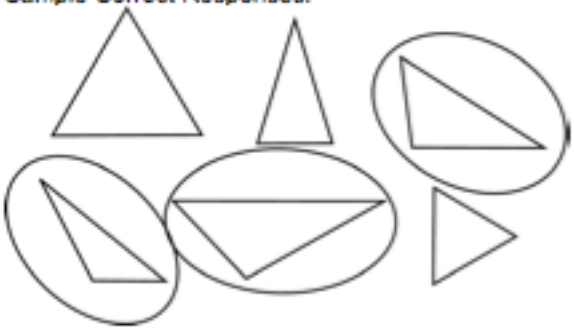
<tr><th>Points</th><th>Student Response</th></tr>
<tr><td>2</td><td>The focus of the task is identifying and defining triangles based on angle measures and side measures. The response provides at least two of the triangles that appear to be scalene and provides an adequate explanation that demonstrates an understanding of the meaning of scalene.<br>Sample Correct Responses:<br>  <br>• Circles the three triangles that appear to be scalene. The scalene triangles are the ones that look like all of the sides are different lengths and all of the angles are different measures.<br>• Circles two of the triangles that appear to be scalene. I circled those triangles because it looked like none of the sides are the same length.</td></tr>
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<td>Question 34</td>
<td>Spring 2007</td>
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**Benchmark G**

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|---|---|---|
| Question 9 | May 2009 | C |
| Question 18 | March 2006 | A |

**Benchmark I**

| | | |
|---|---|---|
| Question 31 | March 2008 | B |
| Question 31 | March 2006 | C |

**Benchmark J**

| | | |
|---|---|---|
| Question 38 | May 2009 | B |
| Question 24 | March 2008 | C |
| Question 5 | Spring 2007 | The focus of this task is to determining whether two shapes are congruent using transformations. The response provides the correct transformation and an adequate explanation of why the transformation can show congruency.<br><br>NOTE: Acceptable responses may correctly state and explain how a combination of transformations can be used to show that the triangles are congruent. |