5th Mathematics Achievement Test
Number, Number Sense and Operations

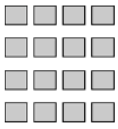
Benchmark A

Question 27	March 2008	C
Question 28	March 2006	A
Question 14	Spring 2007	A

Benchmark B

<table>
<tr><td>Question 6</td><td>Spring 2009</td><td>C</td></tr>
<tr><td>Question 10</td><td>March 2006</td><td>
Scoring Guidelines
<table>
<tr><th>Points</th><th>Student Response</th></tr>
<tr><td>2</td><td>The focus of this task is identifying and generating equivalent forms of fractions, decimals or percents. The response correctly converts the numbers to the same form (all fractions or all decimals or all percents), OR correctly compares the amounts off with adequate evidence AND chooses the first store as having the best sale.
Sample responses:
• Store 1 = 33 $\frac{1}{3}$ % or 33% off, Store 2 = 20% off, Store 3 = 25% off. Store 1 gives the most off, because it has the largest percent off.
• Store 1 = $\frac{1}{3}$ off, Store 2 = $\frac{1}{5}$ off and Store 3 = $\frac{1}{4}$ off. Store 1 gives the most off because it has the largest fraction.
Store 1 = .3 or 0.33 off, Store 2 = .20 off, Store 3 = .25 off. Store 1 gives the most off, because it has the largest decimal.</td></tr>
<tr><td>1</td><td>The response provides partial evidence of identifying and generating equivalent forms of fractions, decimals or percents; however, the solution may be incomplete or slightly flawed.
For example, the response may:
• Provide correct conversions of the numbers to the same form without an explanation.
• Provide correct store with no supporting work.
• Provide incorrect conversions of one of the numbers, but find the best sale based on the incorrect calculation.</td></tr>
<tr><td>0</td><td>The response provides inadequate evidence of identifying and generating equivalent forms of fractions, decimals or percents. The response provides major flaws in reasoning or irrelevant information.
For example, the response may:
• Compare two stores, without identifying correct store.
• Be blank or state unrelated statements.
• Recopy information from the stem.</td></tr>
</table>
</td></tr>
<tr><td>Question 40</td><td>March 2006</td><td>B</td></tr>
<tr><td>Question 32</td><td>Spring 2007</td><td>B</td></tr>
</table>

Benchmark D

<table>
<tr><td>Question 1</td><td>March 2008</td><td>B</td></tr>
<tr><td>Question 10</td><td>March 2008</td><td>
Scoring Guidelines
<table>
<tr><th>Points</th><th>Student Response</th></tr>
<tr><td>4 point
text</td><td>The focus of this task is generating equivalent forms of fractions and percents. The response includes the correct fraction and percent for the number of desks that are in Row 1 out of 25 total desks. The response also provides a drawing representing an arrangement of desks for 25% of the desks between 15 and 22 and identifies the number of desks in row one.
5 out of 25 = $\frac{5}{25} = \frac{1}{5}$
1 ÷ 5 = 0.20
0.20 × 100% = 20%
 
I have 4 desks in each row for a total of 16.
OR
$\frac{1}{4}$ of 20 = 5. I have 5 desks in each row for a total of 20 desks.</td></tr>
<tr><td>3 point
text</td><td>The response provides adequate evidence of generating equivalent forms of fractions and percents; however, the solution may be incomplete or slightly flawed.
3 point sample answer:
For example, the response may:
• Provide a calculation error in one of the equivalent forms, but provide a correct drawing with a complete and correct explanation.
• Provide the correct equivalent forms and a complete drawing with a slight flaw.</td></tr>
<tr><td>2 point</td><td>The response provides partial evidence of generating equivalent forms of fractions and percents; however, the solution may be incomplete or slightly flawed.
For example, the response may:
• Provide all the equivalent forms correctly, but does not provide an adequate drawing of the second classroom.
• Provide one form of 5 out of 25 and a correct drawing with an explanation.</td></tr>
<tr><td>1 point</td><td>The response provides minimal evidence of generating equivalent forms of fractions and percents; however, the solution may be incomplete or slightly flawed.
For example, the response may:
• Provide only one equivalent form of 5 out of 25.
• Provide only a drawing showing 25% of the desks in Row 1.</td></tr>
<tr><td>0 point</td><td>The response provides inadequate evidence of generating equivalent forms of fractions and percents. The response provides major flaws in reasoning or irrelevant information.
For example, the response may:
• State that 5% is an equivalent form.
• Be blank or state unrelated statements.
• Recopy information from the stem.</td></tr>
</table>
</td></tr>
<tr><td>Question 35</td><td>March 2006</td><td>A</td></tr>
<tr><td>Question 2</td><td>Spring 2007</td><td>C</td></tr>
<tr><td>Question 28</td><td>Spring 2007</td><td>A</td></tr>
</table>

Benchmark E

Question 9	Spring 2009	D
Question 23	March 2006	C

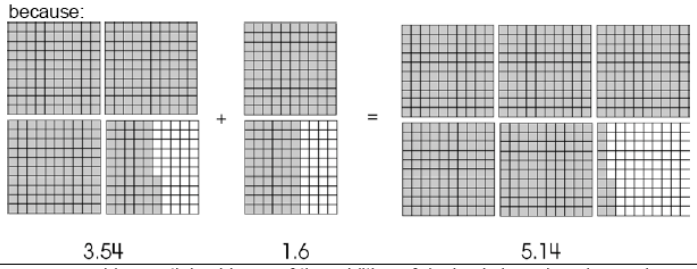
Benchmark F

Question 44	Spring 2009	D
Question 46	March 2006	D

Benchmark H

Question 29 — Spring 2009

Scoring Guidelines

Points	Student Response
2 point	The focus of this task is adding decimals by using place value. The response correctly identifies the person who correctly adds the decimals, with supporting work or an adequate explanation. **Sample response:** • Meg is correct because she lined up the decimals and added correctly. • Meg is correct because Scott did not line up the decimals before he added. • Meg is correct because she added hundredths to hundredths, tenths to tenths and ones to ones. • Meg is correct because: 
1 point	The response provides partial evidence of the addition of decimals by using place value; however, the solution may be incomplete or slightly flawed. **Sample response:** • State that Meg is correct, but give an explanation that is flawed, such as, "She aligned the numbers from the left." • State that Scott is correct, but give an explanation demonstrating an understanding of adding decimals, such as, "He aligned the decimals, added and brought the decimal down."
0 point	The response provides inadequate evidence of the addition of decimals by using place value. The response provides major flaws in reasoning or irrelevant information. **Sample response:** • State that Scott is correct because he added straight down. • Be blank or state unrelated statements.

Question 20 — March 2006

Scoring Guidelines

Points	Student Response
4 point text	The focus of this task is using an estimation strategy to solve a problem and determine the reasonableness of the result. The response provides a reasonable estimate for the number of miles biked from Monday through Saturday with an adequate explanation or supporting work. The response also gives an adequate explanation of the reasonableness of the mother's estimate. Sample response: • 0.87 is almost 1 mile • 1.8 is almost 2 miles • 0.92 is almost 1 mile • 1 + 2 + 1 = 4; 4 x 5 = 20 miles • 0.92 is almost 1 mile • 1 x 2 = 2; 20 + 2 = 22 miles Total for the week is 22 miles. Her mother's estimate is not reasonable because 22 is less than 30. NOTE: Rounding distances to nearest tenth is an acceptable estimation strategy.

		3	The response provides adequate evidence of using an estimation strategy to solve a problem and determine the reasonableness of the result; however, the solution may be incomplete or slightly flawed. For example, the response may: • Provide an accurate estimate for the total miles biked in 6 days without support, AND the explanation of the reasonableness of the mother's estimate is correct. • Provide work with an error in the estimation strategy AND provide an explanation of the reasonableness of the mother's estimate that is based on that error.
		2	The response provides partial evidence of using an estimation strategy to solve a problem and determine the reasonableness of the result; however, the solution may be incomplete or slightly flawed. For example, the response may: • Provide an accurate estimate with supporting work, but the explanation of the reasonableness of the mother's estimate is missing or incorrect. • Provide a correct estimate for an incorrect number of days and an explanation of the reasonableness of the mother's estimate that is based on that error.
		1	The response provides minimal evidence of using an estimation strategy to solve a problem and determine the reasonableness of the result; however, the solution may be incomplete or slightly flawed. For example, the response may: • Provide exact, correct computation rather than an estimate, AND provide a correct explanation of the reasonableness of the mother's estimate. • Provide a correct estimate for one day with or without an explanation of the reasonableness for the mother's estimate.
		0	The response provides inadequate evidence of using an estimation strategy to solve a problem and determine the reasonableness of the result. The response provides major flaws in reasoning or gives irrelevant information. For example, the response may: Provide an exact calculation and rounds the result of that calculation without an explanation of the reasonableness of the mother's estimation. • Provide an exact calculation with no evidence of estimation. • Show a total of 30 miles biked. • Be blank or give unrelated statements. • Recopy information from the stem.

Benchmark I

Question 37	Spring 2009	B
Question 40	Spring 2009	C
Question 39	March 2008	A
Question 7	March 2006	B

Benchmark I (continued)

<table>
<tr>
<td>Question 20</td>
<td>March 2006</td>
<td>
Scoring Guidelines
<table>
<tr><th>Points</th><th>Student Response</th></tr>
<tr><td>4 point text</td><td>The focus of this task is using an estimation strategy to solve a problem and determine the reasonableness of the result. The response provides a reasonable estimate for the number of miles biked from Monday through Saturday with an adequate explanation or supporting work. The response also gives an adequate explanation of the reasonableness of the mother's estimate.
Sample response:
• 0.87 is almost 1 mile
• 1.8 is almost 2 miles
• 0.92 is almost 1 mile
• 1 + 2 + 1 = 4; 4 x 5 = 20 miles
• 0.92 is almost 1 mile
• 1 x 2 = 2; 20 + 2 = 22 miles
Total for the week is 22 miles.
Her mother's estimate is not reasonable because 22 is less than 30.

NOTE: Rounding distances to nearest tenth is an acceptable estimation strategy.</td></tr>
<tr><td>3</td><td>The response provides adequate evidence of using an estimation strategy to solve a problem and determine the reasonableness of the result; however, the solution may be incomplete or slightly flawed.
For example, the response may:
• Provide an accurate estimate for the total miles biked in 6 days without support, AND the explanation of the reasonableness of the mother's estimate is correct.
• Provide work with an error in the estimation strategy AND provide an explanation of the reasonableness of the mother's estimate that is based on that error.</td></tr>
<tr><td>2</td><td>The response provides partial evidence of using an estimation strategy to solve a problem and determine the reasonableness of the result; however, the solution may be incomplete or slightly flawed.
For example, the response may:
• Provide an accurate estimate with supporting work, but the explanation of the reasonableness of the mother's estimate is missing or incorrect.
• Provide a correct estimate for an incorrect number of days and an explanation of the reasonableness of the mother's estimate that is based on that error.</td></tr>
<tr><td>1</td><td>The response provides minimal evidence of using an estimation strategy to solve a problem and determine the reasonableness of the result; however, the solution may be incomplete or slightly flawed.
For example, the response may:
• Provide exact, correct computation rather than an estimate, AND provide a correct explanation of the reasonableness of the mother's estimate.
• Provide a correct estimate for one day with or without an explanation of the reasonableness for the mother's estimate.</td></tr>
<tr><td>0</td><td>The response provides inadequate evidence of using an estimation strategy to solve a problem and determine the reasonableness of the result. The response provides major flaws in reasoning or gives irrelevant information.
For example, the response may:
Provide an exact calculation and rounds the result of that calculation without an explanation of the reasonableness of the mother's estimation.
• Provide an exact calculation with no evidence of estimation.
• Show a total of 30 miles biked.
• Be blank or give unrelated statements.
• Recopy information from the stem.</td></tr>
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<tr>
<td>Question 26</td>
<td>March 2006</td>
<td>B</td>
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<table>
<tr><td>Question 37</td><td>March 2006</td><td>C</td></tr>
<tr><td>Question 42</td><td>Spring 2007</td><td>
Scoring Guidelines
<table>
<tr><th>Points</th><th>Student Response</th></tr>
<tr><td>2 point</td><td>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 +   = 64 and 64 –   = 28.
• 64 – 28 = 36 and 28 + 36 = 64.</td></tr>
<tr><td rowspan="2">1 point</td><td>The response provides partial evidence of identifying and using relationships between operations to solve problems; however, the solution may be incomplete or slightly flawed.</td></tr>
<tr><td>Sample answer:
For example, 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.</td></tr>
<tr><td rowspan="2">0 point</td><td>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.</td></tr>
<tr><td>Sample answer:
For example, 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.</td></tr>
</table>
</td></tr>
</table>