

**4 Mathematics Ohio Graduation Test
Patterns, Functions and Algebra Standard**

Benchmark A

Question 19	March 2008		D										
Question 42	March 2008		C										
Question 3	March 2006		C										
Question 29	March 2006	<table border="1"> <thead> <tr> <th colspan="2">Scoring Guidelines</th> </tr> <tr> <th>Points</th> <th>Student Response</th> </tr> </thead> <tbody> <tr> <td>2</td> <td> <p>The focus of this task is analyzing, extending and describing numerical patterns. The response provides the next three numbers in the pattern and describes the pattern.</p> <p>Sample Correct Responses:</p> <ul style="list-style-type: none"> • 52, 63, 74. The pattern is to add 11 to the previous number. • 52, 63, 74. Plus 11 each time. </td> </tr> <tr> <td>1</td> <td> <p>The response shows partial evidence of analyzing, extending and describing numerical patterns; however, the solution may be incomplete or slightly flawed. For example, the response may:</p> <ul style="list-style-type: none"> • State that the next numbers in the pattern are 52, 63, and 74, but not correctly describe the rule. • Identify an accurate rule, but not correctly find all three of the numbers in the pattern. E.g., 53, 64, 75. The pattern is to add 11 each time. </td> </tr> <tr> <td>0</td> <td> <p>The response provides inadequate evidence of analyzing, extending and describing numerical patterns. The response provides an explanation with major flaws and errors of reasoning. For example, the response may:</p> <ul style="list-style-type: none"> • State that the next three numbers in the pattern are 42, 43, 44 and that the numbers get bigger each time. • Be blank or state unrelated statements. • Recopy information from the stem. </td> </tr> </tbody> </table>	Scoring Guidelines		Points	Student Response	2	<p>The focus of this task is analyzing, extending and describing numerical patterns. The response provides the next three numbers in the pattern and describes the pattern.</p> <p>Sample Correct Responses:</p> <ul style="list-style-type: none"> • 52, 63, 74. The pattern is to add 11 to the previous number. • 52, 63, 74. Plus 11 each time. 	1	<p>The response shows partial evidence of analyzing, extending and describing numerical patterns; however, the solution may be incomplete or slightly flawed. For example, the response may:</p> <ul style="list-style-type: none"> • State that the next numbers in the pattern are 52, 63, and 74, but not correctly describe the rule. • Identify an accurate rule, but not correctly find all three of the numbers in the pattern. E.g., 53, 64, 75. The pattern is to add 11 each time. 	0	<p>The response provides inadequate evidence of analyzing, extending and describing numerical patterns. The response provides an explanation with major flaws and errors of reasoning. For example, the response may:</p> <ul style="list-style-type: none"> • State that the next three numbers in the pattern are 42, 43, 44 and that the numbers get bigger each time. • Be blank or state unrelated statements. • Recopy information from the stem. 	
Scoring Guidelines													
Points	Student Response												
2	<p>The focus of this task is analyzing, extending and describing numerical patterns. The response provides the next three numbers in the pattern and describes the pattern.</p> <p>Sample Correct Responses:</p> <ul style="list-style-type: none"> • 52, 63, 74. The pattern is to add 11 to the previous number. • 52, 63, 74. Plus 11 each time. 												
1	<p>The response shows partial evidence of analyzing, extending and describing numerical patterns; however, the solution may be incomplete or slightly flawed. For example, the response may:</p> <ul style="list-style-type: none"> • State that the next numbers in the pattern are 52, 63, and 74, but not correctly describe the rule. • Identify an accurate rule, but not correctly find all three of the numbers in the pattern. E.g., 53, 64, 75. The pattern is to add 11 each time. 												
0	<p>The response provides inadequate evidence of analyzing, extending and describing numerical patterns. The response provides an explanation with major flaws and errors of reasoning. For example, the response may:</p> <ul style="list-style-type: none"> • State that the next three numbers in the pattern are 42, 43, 44 and that the numbers get bigger each time. • Be blank or state unrelated statements. • Recopy information from the stem. 												
Question 20	Spring 2007	<table border="1"> <tbody> <tr> <td>3 point</td> <td> <p>The response clearly addresses extending and analyzing a pattern. However, the response may include minor errors in calculation or minimal flaws in reasoning. The response may not address all aspects of the questions. For example, the response may:</p> <ul style="list-style-type: none"> • Correctly construct the table, explain the pattern, and write an expression. • Give all of the correct answers with no explanations. • Include the table, explain the pattern and determine how many after 9 weeks but not state the expression or state an incorrect expression. </td> </tr> <tr> <td>2 point</td> <td> <p>The response provides evidence of a partial interpretation and solution of extending and describing a pattern. The response may address parts but not the entire problem appropriately. For example, the response may:</p> <ul style="list-style-type: none"> • State the pattern and construct the table correctly, but fail to give an accurate expression and description after 9 weeks. • State the pattern and what happens after 9 weeks correctly. • Show the table and the expression. </td> </tr> <tr> <td>1 point</td> <td> <p>The response provides minimal evidence of understanding patterns. The response omits significant aspects of extending and analyzing patterns. However, there is slight evidence of the process needed to yield the correct answer. The response may only address one aspect of the problem correctly. For example, the response may:</p> <ul style="list-style-type: none"> • Draw a complete and correct table. • State the expression. • Explain the pattern. • State the amount of trees after 9 weeks. </td> </tr> <tr> <td>0 point</td> <td> <p>The response indicates inadequate evidence of understanding, analyzing and extending patterns. The response may be highly flawed or completely incorrect. For example, the response may:</p> <ul style="list-style-type: none"> • State that after the first week there are 15 trees and 30 after the second week. • Recopy information given in the stem. • Be blank or make unrelated statements. </td> </tr> </tbody> </table>	3 point	<p>The response clearly addresses extending and analyzing a pattern. However, the response may include minor errors in calculation or minimal flaws in reasoning. The response may not address all aspects of the questions. For example, the response may:</p> <ul style="list-style-type: none"> • Correctly construct the table, explain the pattern, and write an expression. • Give all of the correct answers with no explanations. • Include the table, explain the pattern and determine how many after 9 weeks but not state the expression or state an incorrect expression. 	2 point	<p>The response provides evidence of a partial interpretation and solution of extending and describing a pattern. The response may address parts but not the entire problem appropriately. For example, the response may:</p> <ul style="list-style-type: none"> • State the pattern and construct the table correctly, but fail to give an accurate expression and description after 9 weeks. • State the pattern and what happens after 9 weeks correctly. • Show the table and the expression. 	1 point	<p>The response provides minimal evidence of understanding patterns. The response omits significant aspects of extending and analyzing patterns. However, there is slight evidence of the process needed to yield the correct answer. The response may only address one aspect of the problem correctly. For example, the response may:</p> <ul style="list-style-type: none"> • Draw a complete and correct table. • State the expression. • Explain the pattern. • State the amount of trees after 9 weeks. 	0 point	<p>The response indicates inadequate evidence of understanding, analyzing and extending patterns. The response may be highly flawed or completely incorrect. For example, the response may:</p> <ul style="list-style-type: none"> • State that after the first week there are 15 trees and 30 after the second week. • Recopy information given in the stem. • Be blank or make unrelated statements. 			
3 point	<p>The response clearly addresses extending and analyzing a pattern. However, the response may include minor errors in calculation or minimal flaws in reasoning. The response may not address all aspects of the questions. For example, the response may:</p> <ul style="list-style-type: none"> • Correctly construct the table, explain the pattern, and write an expression. • Give all of the correct answers with no explanations. • Include the table, explain the pattern and determine how many after 9 weeks but not state the expression or state an incorrect expression. 												
2 point	<p>The response provides evidence of a partial interpretation and solution of extending and describing a pattern. The response may address parts but not the entire problem appropriately. For example, the response may:</p> <ul style="list-style-type: none"> • State the pattern and construct the table correctly, but fail to give an accurate expression and description after 9 weeks. • State the pattern and what happens after 9 weeks correctly. • Show the table and the expression. 												
1 point	<p>The response provides minimal evidence of understanding patterns. The response omits significant aspects of extending and analyzing patterns. However, there is slight evidence of the process needed to yield the correct answer. The response may only address one aspect of the problem correctly. For example, the response may:</p> <ul style="list-style-type: none"> • Draw a complete and correct table. • State the expression. • Explain the pattern. • State the amount of trees after 9 weeks. 												
0 point	<p>The response indicates inadequate evidence of understanding, analyzing and extending patterns. The response may be highly flawed or completely incorrect. For example, the response may:</p> <ul style="list-style-type: none"> • State that after the first week there are 15 trees and 30 after the second week. • Recopy information given in the stem. • Be blank or make unrelated statements. 												

Benchmark B

Question 29	May 2009		C
Question 5	March 2008	Scoring Guidelines	
		Points	Student Response
		2 point	<p>Sample Correct Responses:</p> <ul style="list-style-type: none"> 16 benches. The pattern is that you multiply the number of cans by 2 to get the number of benches you can paint. $8 \times 2 = 16$ 16 benches. The table shows that the number of benches goes up by 4 so I added $12 + 4 = 16$. 16 benches. The number of cans is doubled to get the number of benches. $8 + 8 = 16$. <p>The focus of this task is to provide evidence of analyzing, extending and describing patterns. The response correctly identifies the number of benches and provides adequate support to explain how to find the answer.</p>
		1 point	<p>The response provides partial evidence of analyzing, extending and describing patterns; however, the solution may be incomplete or slightly flawed.</p> <p>For example, the response may:</p> <ul style="list-style-type: none"> State that 16 benches can be painted but not explain how the answer was found or there is a flaw in the explanation. Indicate an accurate rule for finding the number of benches that can be painted but does not correctly find the number of benches that can be painted. E.g., 14 benches. You keep adding 4 to the number of benches.
0 point	<p>The response provides inadequate evidence of analyzing, extending and describing patterns. The response will provide major flaws or irrelevant information.</p> <p>For example, the response may:</p> <ul style="list-style-type: none"> Show some work but use a highly flawed strategy. E.g., 20 benches. Add $4 + 8 = 12$, $8 + 12 = 20$. Be blank or state unrelated statements. Recopy information from the stem. 		
Question 45	March 2008		C
Question 7	March 2006		D
Question 19	March 2006		B

Benchmark D

Question 40	March 2006		A
Question 37	Spring 2007		D

Benchmark E

Question 24	March 2006		B
Question 34	March 2006		A
Question 40	March 2006		A

Benchmark F

Question 45	Spring 2007		B
-------------	-------------	--	---

Benchmark G

Question 8	May 2009		B
Question 44	March 2006		D