

**5th Mathematics Ohio Achievement Test
Data Analysis and Probability Standard**

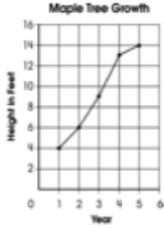
Benchmark A

Question 36	March 2008		B																										
Question 29	March 2006	<p>In your Answer Document, construct a frequency table to summarize the data. Be sure to include labels. (2 points)</p> <p>Scoring Guidelines</p> <table border="1"> <thead> <tr> <th>Points</th> <th>Student Response</th> </tr> </thead> <tbody> <tr> <td>2</td> <td> <p>The focus of this task is constructing a frequency table. The response includes an accurate frequency table that is labeled. Sample responses:</p> <p align="center">Student's Favorite Dessert</p> <table border="1"> <thead> <tr> <th>Dessert</th> <th>Frequency</th> </tr> </thead> <tbody> <tr> <td>Brownies</td> <td>IIII</td> </tr> <tr> <td>Cookies</td> <td>II</td> </tr> <tr> <td>Cupcakes</td> <td>I</td> </tr> <tr> <td>Ice Cream</td> <td>IIIT</td> </tr> </tbody> </table> </td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th colspan="2">Student's Favorite Dessert</th> </tr> <tr> <th>Dessert</th> <th>Frequency</th> </tr> </thead> <tbody> <tr> <td>Brownies</td> <td>4</td> </tr> <tr> <td>Cookies</td> <td>2</td> </tr> <tr> <td>Cupcakes</td> <td>1</td> </tr> <tr> <td>Ice Cream</td> <td>5</td> </tr> </tbody> </table>	Points	Student Response	2	<p>The focus of this task is constructing a frequency table. The response includes an accurate frequency table that is labeled. Sample responses:</p> <p align="center">Student's Favorite Dessert</p> <table border="1"> <thead> <tr> <th>Dessert</th> <th>Frequency</th> </tr> </thead> <tbody> <tr> <td>Brownies</td> <td>IIII</td> </tr> <tr> <td>Cookies</td> <td>II</td> </tr> <tr> <td>Cupcakes</td> <td>I</td> </tr> <tr> <td>Ice Cream</td> <td>IIIT</td> </tr> </tbody> </table>	Dessert	Frequency	Brownies	IIII	Cookies	II	Cupcakes	I	Ice Cream	IIIT	Student's Favorite Dessert		Dessert	Frequency	Brownies	4	Cookies	2	Cupcakes	1	Ice Cream	5	
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Question
33

Spring
2007

Scoring Guidelines

Points	Student Response
4 point	<p>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.</p> <p>NOTE: An acceptable reason for why Chris' graph is not appropriate is that there are no percents used in the data.</p> <p>Exemplar Response: Chris' circle graph is not appropriate since there is no part to whole relationship with the</p> <div style="text-align: center;">  </div> <p>maple tree data. The line graph is better since it shows growth over time.</p>

Continued on next page

3 point	<p>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.</p> <p>Sample answer: For example, the response may:</p> <ul style="list-style-type: none"> • 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	<p>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.</p> <p>Sample answer: For example, the response may:</p> <ul style="list-style-type: none"> • 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	<p>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.</p> <p>Sample answer: For example, the response may:</p> <ul style="list-style-type: none"> • 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	<p>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.</p> <p>Sample answer: For example, the response may:</p> <ul style="list-style-type: none"> • 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.

Benchmark D

Question 33	Spring 2010	D
Question 3	Spring 2007	D

Benchmark E

Question 32	March 2006	A
Question 12	Spring 2007	C

Benchmark F

Question 45	Spring 2010	B
Question 3	March 2006	B
Question 8	March 2006	D
Question 43	March 2006	C

Benchmark H

Question 30	Spring 2010	A										
Question 5	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 finding and listing all possible outcomes of a problem situation. The response provides all possible combinations in a list, tree diagram or pictures.</p> <p>Sample response:</p> <ul style="list-style-type: none"> • Red, navy; Red, black; Red, tan; Green, navy; Green, black; Green, tan; White, navy; White, black; White, tan; Yellow, navy; Yellow, black; Yellow, tan • Tree diagram showing all the possible combinations <p>Drawing of all the combinations.</p> </td> </tr> <tr> <td>1</td> <td> <p>The response provides partial evidence of finding and listing all possible outcomes of a problem situation; however, the solution may be incomplete or slightly flawed.</p> <p>For example, the response may:</p> <ul style="list-style-type: none"> • Provide at least 6 correct combinations. • State that there are 12 combinations, but fail to list them. • Provide a tree diagram with omissions. </td> </tr> <tr> <td>0</td> <td> <p>The response provides inadequate evidence of finding and listing all possible outcomes of a problem situation. The response provides major flaws in reasoning or irrelevant information.</p> <p>For example, the response may:</p> <ul style="list-style-type: none"> • Provide a random list of a few combinations. • Be blank or provide unrelated statements. • Recopy information from the stem. </td> </tr> </tbody> </table>	Scoring Guidelines		Points	Student Response	2	<p>The focus of this task is finding and listing all possible outcomes of a problem situation. The response provides all possible combinations in a list, tree diagram or pictures.</p> <p>Sample response:</p> <ul style="list-style-type: none"> • Red, navy; Red, black; Red, tan; Green, navy; Green, black; Green, tan; White, navy; White, black; White, tan; Yellow, navy; Yellow, black; Yellow, tan • Tree diagram showing all the possible combinations <p>Drawing of all the combinations.</p>	1	<p>The response provides partial evidence of finding and listing all possible outcomes of a problem situation; however, the solution may be incomplete or slightly flawed.</p> <p>For example, the response may:</p> <ul style="list-style-type: none"> • Provide at least 6 correct combinations. • State that there are 12 combinations, but fail to list them. • Provide a tree diagram with omissions. 	0	<p>The response provides inadequate evidence of finding and listing all possible outcomes of a problem situation. The response provides major flaws in reasoning or irrelevant information.</p> <p>For example, the response may:</p> <ul style="list-style-type: none"> • Provide a random list of a few combinations. • Be blank or provide unrelated statements. • Recopy information from the stem.
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Benchmark I

Question 33	Spring 2009	Scoring Guidelines		
		Points	Student Response	
		4 point	The focus of this task is creating a simple experiment so that each choice will have the same probability. The response provides the correct number of cards to be added so that the probability of picking one of the colors is the same for all choices with an adequate explanation AND the correct probability of picking one of the colors. Sample response: Monica has 5 green cards. She could add 2 red cards, 1 blue card and 5 yellow cards. I know this because each color must have the same number of cards. The probability $\frac{5}{20} = \frac{1}{4}$ would be $\frac{5}{20}$ or $\frac{1}{4}$ for any color.	
		3 point	The response provides evidence of creating a simple experiment so that each choice will have the same probability; however, the solution may contain a slight error, a flaw or a vague explanation. Sample response: <ul style="list-style-type: none"> Provide the number of cards added without an adequate explanation but provide the correct probability. Make a minor counting error in the number of one of the cards that leads to an incorrect number of cards but gives the correct probability. 	
		2 point	The response provides partial evidence of creating a simple experiment so that each choice will have the same probability; however, the solution is incomplete and/or contains minor flaws. Sample response: <ul style="list-style-type: none"> Only provide the correct number of cards added of each type with or without an adequate explanation, but fail to provide a probability. 	
		1 point	The response provides minimal evidence of creating a simple experiment so that each choice will have the same probability. The response has major flaws and errors in reasoning. Sample response: <ul style="list-style-type: none"> Provide the correct probability of drawing any of the color cards before or after adding the yellow cards. Only provide an adequate explanation for finding the number of cards; such as, "All have the same amount." 	
0 point	The response provides inadequate evidence of creating a simple experiment so that each choice will have the same probability. The response provides major flaws in explanations or irrelevant information. Sample response: <ul style="list-style-type: none"> State that it is impossible to have the same probability since there are different numbers of cards. Restate the information provided in the item. Be blank or give irrelevant information. 			
Question 32	March 2008			D
Question 22	March 2006			D

Benchmark J

Question 13	Spring 2009	A
Question 46	Spring 2009	B
Question 41	March 2008	B
Question 17	March 2006	A

Benchmark K

Question	Spring 2007	B
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