

MeTEOR Performance Task

Algebra II

Mathematics

Volume of the Coffee Mug Container

Complete Performance Task Scoring Rubric *Volume of the Coffee Mug Container*

22-24 Proficient 19-21 Good 17-18 Satisfactory 14-16 Poor 0-13 Unsatisfactory

	Depth of Knowledge Level	Points	Total Possible Points for Task	Total Points Earned by Student
<p>Task 1:</p> <p>A. Descending</p> <p>B. It is placed over the term in the dividend with the same degree.</p> <p>C. The degree of the remained is less than the divisor.</p> <p>D. $x - 8$; $3x - 5$ $x^2 + 4x + 3$ R 5; $4x^2 + x - 6$ R 6</p> <p>E. $x^2 + x - 2$</p>	1	<p>1</p> <p>1</p> <p>1</p> <p>2</p> <p>1</p>	6	
<p>Task 2:</p> <p>A. Long Division works on all division problems. Synthetic Division only can be used when you divide by a linear expression.</p> <p>B. If you divide a polynomial $P(x)$ of degree $n \geq 1$ by $x - a$, then the remainder is $P(a)$</p> <p>C. 18, 0</p> <p>D. $2x^2 + 11x + 14$</p> <p>E. Answers will vary. Possible Explanation: "I multiplied the polynomials and added 2 to the result."</p>	2	<p>2</p> <p>1</p> <p>1</p> <p>1</p>	6	

<p>Task 3:</p> <p>A. $7x^2 - 2x + 10$</p> <p>B. 339</p> <p>C. 9</p> <p>D. $126x^3 + 279x^2 + 90x + 508$</p> <p>E. Answers may vary. Possible Explanation: “I knew that when x was equal to 7, there were not enough people at the show. When I changed 7 to 8 and multiplied it out, it still was under the 500 minimum the company wanted. Substituting 9 in gave me the minimum, but was over the 500. I decided to go back and work with the value of x being equal to 8. To have it equal 500, I had to add in the difference which was the 58.”</p>	2	1 1 1 1 2	6	
<p>Task 4:</p> <p>A. $(x - 3)$ inches, $(x + 3)$ inches</p> <p>B. $(2x + 10)$ inches, $(2x - 6)$ inches, $(2x + 6)$ inches</p> <p>C. $8x^3 + 40x^2 - 72x - 360$ cubic inches</p> <p>D. 8</p> <p>E. Answers may vary. Possible Explanation: “First, I doubled the dimensions and multiplied out the new volume. I noticed the leading coefficient was 8 times the original number as were each of the other coefficients. To check my work, I drew a picture to show the dimensions doubled and stacked the coffee mugs to model the problem. There were 8.”</p>	3	1 1 1 1 2	6	
TOTAL POINTS:				



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