

# MeTEOR Performance Task

## Algebra II

Mathematics

Rational Exponents 1h Pool Dimensions

## Complete Performance Task Scoring Rubric *Rational Exponents with Pool Dimensions*

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><b>Task 1:</b></p> <p>A. radicand</p> <p>B. <math>b^{m/n} = \sqrt[n]{b^m}</math></p> <p>C. index</p> <p>D. 6, 6, 256, 16 -7, -3, 27, 32</p> <p>E. <math>\sqrt[5]{x^2}</math>, <math>\sqrt[3]{27^2}</math>, <math>\sqrt[4]{81^3}</math>, <math>\sqrt[2]{4^3}</math></p> <p>F. 120</p>	<b>1</b>	<p><b>1</b></p> <p><b>1</b></p> <p><b>1</b></p> <p><b>2</b></p> <p><b>2</b></p> <p><b>1</b></p>	<b>8</b>	
<p><b>Task 2:</b></p> <p>A. 7, 8, 54</p> <p>B. 6, 3</p> <p>C. “I simplified the bases to their prime factors. Then, set the exponents to an equation and solved them.”</p> <p>D. 288 cubic inches</p> <p>E. “I knew that when you double the dimensions in a volume problem, the volume becomes 8 times the amount. I doubled the numbers and multiplied it out to verify.”</p>	<b>2</b>	<p><b>1</b></p> <p><b>1</b></p> <p><b>1</b></p> <p><b>1</b></p> <p><b>1</b></p>	<b>5</b>	

<p><b>Task 3:</b></p> <p>A. Moose: 0.64 Kg Elephant: 3.24 Kg Lion: 0.49 Kg Llama: 0.36 Kg</p> <p>B. 195,112 Kg</p> <p>C. “First, I set up the equation and divided out the .01 getting 3,364. Since this represented two thirds of the weight, I worked backwards by inverting the exponent, using three halves as the exponent. Finally, I checked my work.”</p>	<b>2</b>	<b>2</b>	<b>5</b>	
<p><b>Task 4:</b></p> <p>A. 82 ft., 94 ft.</p> <p>B. 1600 cubic feet, 1984 cubic feet</p> <p>C. 384 cubic feet</p> <p>D. 20 by 20 by 4</p> <p>E. Answers will vary. Possible Explanation: “First, I divided by 4 because that was the constant depth of each pool. Then, I square rooted the remaining number to see if it were a perfect square. Since it was, I had my answer. I checked my work and it was correct. I did find one other set of dimensions that would work if you made the pool 16 feet deep. The side lengths would be 10 feet”.</p>	<b>3</b>	<b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>2</b>	<b>6</b>	
<b>TOTAL POINTS:</b>				



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