MeTEOR Performance Task
Algebra I

Mathematics
Quadratics in Volleyball

MeTEOR
CONNECTING THE DOTS

Complete Performance Task Scoring Rubric
Quadratics and Volleyball

	Depth of Knowledge Level	Points	Total Possible Points for Task	Total Points Earned by Student
Task 1: A. $ax^2 + bx + c = 0$ B. Factoring, Completing the square, Using the Quadratic Formula and Graphing C. Completing the square D. 1st Step: Take half the coefficient of x 2nd Step: Square it 3rd Step: Add the result E. 25, 36, 6.25, 2.25	1	1 1 1 1 1	5	
Task 2: A. $x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ B. discriminant C. complex D. {5,-6}, {-6} {5, 2}, {3,-0.4} E. 255 meters 8 seconds and 12 seconds 20 seconds	1	1 1 1 1 1	5	

Task 3:	2		6	
A. x = 5		1		
B. Answers will vary. Possible Explanation: "First, I subdivided the irregular shape into two smaller rectangles. Then, I found the area of each rectangle by multiplying the polynomials together and adding their products. Next, I set it equal to 80 and solved. Since there is no negative distance, I used the solution of 5."		2		
C. 110 squared meters		1		
D. Answers will vary. Possible Explanation: "Removing the trees in the bottom right corner of the property would allow the pen to become a rectangle as stated in the problem. Since opposite sides of a rectangle are congruent, I used segment addition to find the right side to equal $(x + 5)$. The top and bottom would both be $(2x + 1)$. I multiplied these lengths and widths together to find the area of the new pen and got $2x^2 + 11x + 5$. I substituted *5 from Part A* into the problem to get 110 square meters for the new area."		2		
Task 4:	3		5	
A. 2.65 meters		1		
B. 1.4 seconds		1		
C. 1.53 seconds		1		
D. 3.45 meters Answers will vary. Possible Explanation: "I went back to Part B where the time was 1.4 seconds. Since that was the total time from leaving her hand to being one meter		2		

above the ground on the way back down, I cut it in half and got .7 for half the time. This is the number I substituted back into the equation for the time. Once I worked out the equation, I had to add 1 back into my answer because she served the ball one meter off the ground."				
			TOTAL POINTS:	