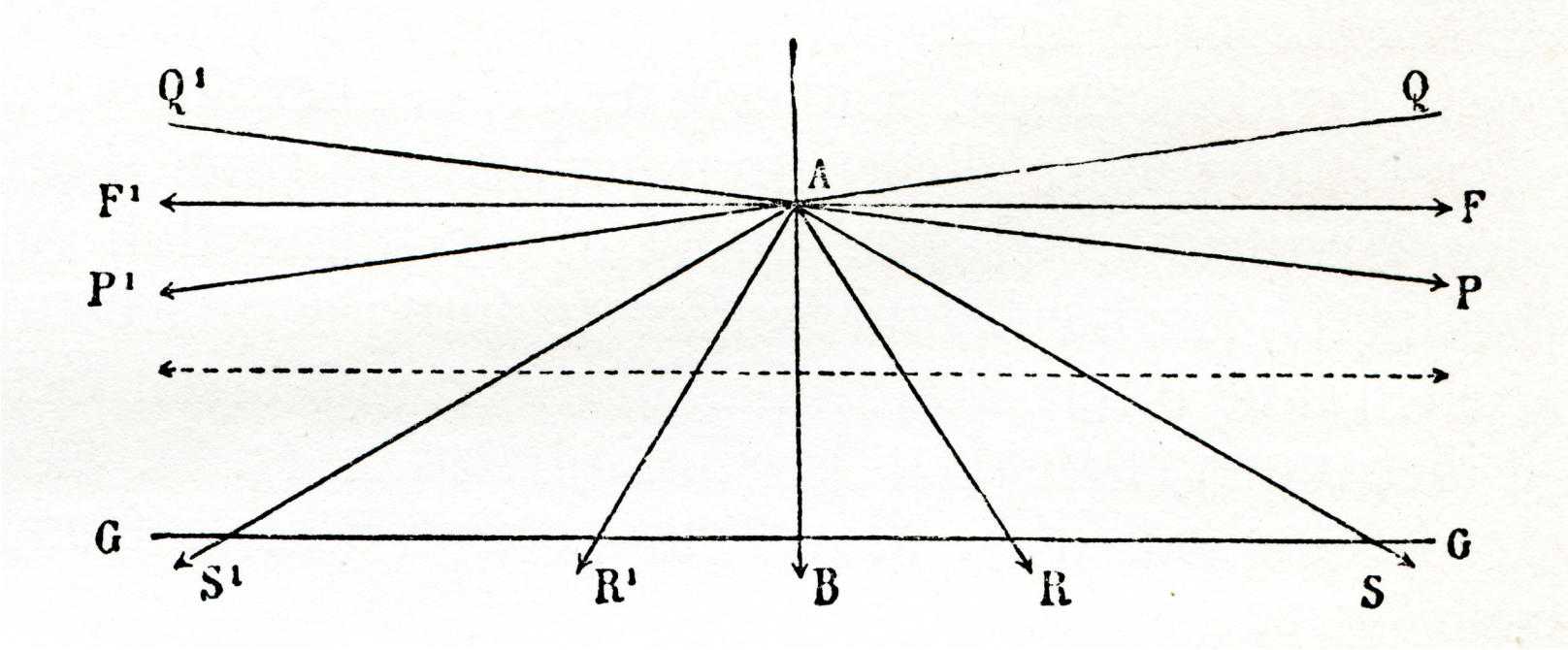
MeTEOR Performance Task
Geometry

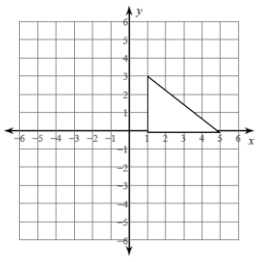
Mathematics

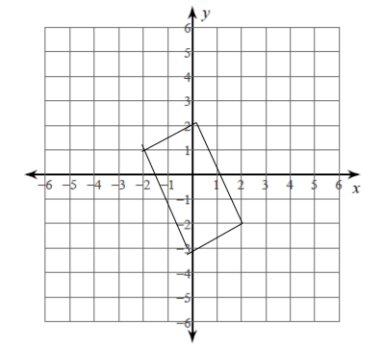
Proving a Polygon



Complete Performance Task Scoring Rubric
Proving Polygons

23-25 Proficient 20-22 Good 17-19 Satisfactory 15-16 Poor 0-14 Unsatisfactory

	Depth of Knowledge Level	Points	Total Possible Points for Task	Total Points Earned by Student
Task 1:	**1**		**4**	
A. $m = \frac{y_2 - y_1}{x_2 - x_1}$		**1**		
B. $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$		**1**		
C. 1/3; 5/6		**1**		
D. 5		**1**		
Task 2:	**2**		**6**	
A. Explanation: The difference between parallel and perpendicular lines is their slopes. Parallel lines have the same or equal slopes and perpendicular lines have opposite reciprocal slopes. A pair of perpendicular lines forms 90° angles.		**2**		
B. **-**5		**1**		
C. **-**1/2 or -2/4		**1**		
D. y = 4x – 5		**1**		
E. y = -2x + 6		**1**		
Task 3:	**3**		**6**	
A. 		**1**		

B. Right Triangle		**1**		
C. From point A to B = 4 Deka-meters From point B to C = 5 Deka-meters From point C to A = 3 Deka meters		**1**		
D. Total distance: 12 Deka-meters		**1**		
E. Answers will vary. Possible Explanation: "I counted two of the three side lengths and used the Pythagorean Theorem to solve the hypotenuse. Then, I added the three side lengths together to get the total distance around the right triangle." "I found the distance between each point using the Distance Formula. Once the side lengths are determined, I added them together to find the total distance around the triangle."		**2**		
Task 4: A.  	**3**	**1**	**9**	
B. Explanation: Line $\overline{CD}$ has a slope of -2 and line $\overline{FE}$ has a slope of -2. These lines have the same slope making them parallel to each other. Line $\overline{CF}$ has a slope of ½ and line $\overline{DE}$ has a slope of ½. These lines have the same slope making them parallel to each other.		**1** **1**		
C. Explanation: The adjacent sides are perpendicular because their slopes are		**1**		

opposite reciprocals. Slopes of -2 and ½ are opposite reciprocals.				
D. Length: $\overline{CD} = \sqrt{20}$ or $2\sqrt{5}$ $\overline{DE} = \sqrt{5}$ $\overline{EF} = \sqrt{20}$ or $2\sqrt{5}$ $\overline{FD} = \sqrt{5}$		**1**		
E. Precise name: Rectangle		**1**		
F. Answers will vary. Possible Justification: "First, using the distance formula, I found opposite side lengths to be congruent. Then, using the slope formula, I found opposite sides to have equal slopes. Next, I found the adjacent sides were perpendicular to each other due to having opposite reciprocal slopes. By definition of perpendicularity, this made each angle to be 90 degrees. Finally, since all four sides were not congruent in length, the properties of opposite sides being congruent (but not all congruent), opposite sides being parallel and four 90 degree angles make this shape a rectangle."		**3**		
			TOTAL POINTS:	

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