Geometry Problem of the Week Scoring Rubric for *Broken Pottery*

For each category, choose the level that best describes the student's work.

	Novice	Apprentice	Practitioner	Expert
Problem Solving				
Interpretation	Shows understanding of few of the criteria listed in the Practitioner column.	Shows understanding of most but not all of the criteria listed in the Practitioner column. (for example, assumes the sherd is half the circle, attempts to solve for the area, radius, or circumference of the original plate)	Understands that: • the sherd is an arc of a circle, not necessarily a semi-circle • the problem asks for a method, not (just) a numerical value • the problem asks for a method to find the diameter of the circle	Solves the main problem and the Extra correctly, and is at least a Practitioner in Strategy.
Strategy *(based on the solver's interpretation of the problem)*	Has no ideas that will lead them toward a successful solution. Has not written enough to tell what strategy they might have used.	Picks an incorrect strategy, or relies on luck to get the right answer. Note that relying on reasonable estimation is not the same as relying on luck for this problem – accurate sketching is a viable strategy. (For example, may suggest a drawing method that relies on finding the center with no mention of how to find the center)	Picks a sound strategy—success achieved through algebraic skill, not luck. For example, the solver could: • use a compass tool or series of concentric circles to reconstruct and measure the original plate. • draw tangents to the arc and find the intersections of the radii to the points of tangency. • find the intersection of the perpendicular bisectors of two chords • use the Pythagorean theorem	Might compare two strategies, discussing the relative accuracy, or which strategy would be more effective for larger or smaller sherds.
Accuracy *(based on the chosen strategy)*	Has made many errors.	Has made several mistakes or misstatements.	Makes few or no mistakes of consequence and uses largely correct vocabulary.	[Generally not possible – can't be more accurate than Practitioner.]
Communication				
Completeness *(an incorrect solution can be complete)*	Has written very little that tells or shows how they found their answer.	Submitted explanation without work or work without explanation. Leaves out enough details that another student couldn't follow or learn from the explanation.	Explains all of the important steps taken to solve the problem. Explains the rationale behind steps. May not prove why the perpendicular bisectors of chords intersect at the center, but at least cites it as a known fact if used.	Adds in useful extensions and further explanation of some of the ideas involved. The additions are helpful, not just "I'll say more to get more credit."
Clarity *(incomplete and incorrect solutions can be explained clearly)*	Explanation is very difficult to read and follow.	Another student might have trouble following the explanation. Long and in one paragraph. Many spelling errors/typos.	Explains the steps that they *do* explain in such a way that another student would understand (needn't be complete to be clear). Makes an effort to check formatting, spelling, and typing (a few errors are okay).	Format and organization make ideas exceptionally clear. Answer is very readable and appealing.
Reflection *(see the items in the gray box)*	Does nothing reflective.	Includes one reflective item.	Includes two reflective items.	Does three or more reflective items or does an exceptional job with two.
	The items in the columns to the right are considered reflective, and might be in the solution or comment:	• **Revises and improves a previous submission.** • Checks the answer using a different method. • Explains a hint she/he would give another student.	• Reflects on the reasonableness of the answer. • Connects the problem to prior knowledge/experience. • Describes any errors made and how she/he found and corrected them. • States any assumptions made in the solving process. • Described something learned from the problem.	• Comments on *and* explains the ease or difficulty of the problem. • Explains where she/he is stuck. • Summarizes the process used. • Describes any "aha!" moments.