

Grade 8 Mathematics Sample CR Item Form Claim 2

MAT.08.CR.2.0000G.A.001 Claim 2

| Sample Item ID: | MAT.08.CR.2.0000G.A.001 | |
|----------------------------|--|--|
| Grade: | 08 | |
| Primary Claim: | Claim 2: Problem Solving | |
| Trimary claim: | Students can solve a range of complex well-posed problems in | |
| | pure and applied mathematics, making productive use of | |
| | knowledge and problem solving strategies. | |
| Secondary Claim(s): | Claim 1: Concepts and Procedures | |
| | Students can explain and apply mathematical concepts and carry | |
| | out mathematical procedures with precision and fluency. | |
| Primary Content Domain: | Geometry | |
| Secondary Content | • | |
| Domain(s): | | |
| Assessment Target(s): | 2 A: Apply mathematics to solve well-posed problems arising in | |
| | everyday life, society, and the workplace. (DOK 2, 3) | |
| | | |
| | 1 I: Solve real-world and mathematical problems involving | |
| | volume of cylinders, cones and spheres. | |
| Standard(s): | 8.G.9 | |
| Mathematical Practice(s): | 1, 2, 5, 6, 8 | |
| DOK: | 2 | |
| Item Type: | CR | |
| Score Points: | 3 | |
| Difficulty: | M | |
| Key: | See Sample Top-Score Response. | |
| Stimulus/Source: | | |
| Target-specific attributes | | |
| (e.g., accessibility | | |
| issues): | | |
| Notes: | Entry spaces for radius and height boxes are limited to three | |
| | numeric characters. | |
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student provides 1 correct set of dimensions.

| Juan needs a right cylindrical storage tank that holds between 110 and 115 cubic feet of water. | | | |
|--|--------------|--------------|--|
| Using whole numbers only, provide the radius and height for 3 different tanks that hold between 110 and 115 cubic feet of water. | | | |
| Tank #1 | Tank #2 | Tank #3 | |
| radius = ft. | radius = ft. | radius = ft. | |
| height = ft. | height = ft. | height = ft. | |
| Sample Top-Score Response: | | | |
| Tank #1: $r = 2$, $h = 9$ Tank #2: $r = 3$; $h = 4$ Tank #3: $r = 6$; $h = 1$ | | | |
| Scoring Rubric: | | | |
| Responses to this item will receive 0-3 points, based on the following: | | | |
| 3 points: The student shows a thorough understanding of the volume of cylinders. The student provides 3 correct sets of dimensions. | | | |
| 2 points: The student shows a partial understanding of the volume of cylinders. The student provides 2 correct sets of dimensions. | | | |
| 1 point: The student shows a limited understanding of the volume of cylinders. The | | | |

O points: The student shows inconsistent or no understanding of the volume of cylinders.