

NAME: _____

G.G.16: Apply the properties of a sphere, including: the intersection of a plane and a sphere is a circle, a great circle is the largest circle that can be drawn on a sphere, two planes equidistant from the center of the sphere and intersecting the sphere do so in congruent circles, surface area is $4 \times \pi \times r^2$, volume is $\frac{4}{3} \times \pi \times r^3$

1. 060028a, P.I. G.G.16

Tamika has a hard rubber ball whose circumference measures 13 inches. She wants to box it for a gift but can only find cube-shaped boxes of sides 3 inches, 4 inches, 5 inches, or 6 inches. What is the *smallest* box that the ball will fit into with the top on?

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[3] 5-inch box and appropriate work is shown, including showing a diameter between 4 and 5.

[2] The correct diameter is shown, but the wrong box size is chosen.

or [2] The correct radius is shown, but the 3-inch box is chosen.

[1] The correct diameter or radius is shown, but no box is chosen.

or [1] An appropriate radius between 2 and 3 is shown, using the incorrect formula

$A = \pi r^2$, and the 3-inch box is chosen.

or [1] An appropriate diameter, using

$A = \pi r^2$, is shown, but the appropriate box is chosen.

or [1] An appropriate radius, using $A = \pi r^2$, is shown, but no box is chosen.

or [1] The 5-inch box is chosen, but no work is shown.

[0] A zero response is completely incorrect, irrelevant, or incoherent or is a correct response that was obtained by an obviously

[1] incorrect procedure.