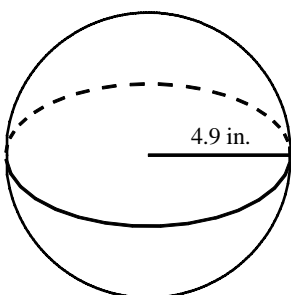


NAME: _____

P.I. G.G.16: Apply the properties of a sphere, including volume is four-thirds \times pi \times radius³

1. Find the volume of the sphere. (Use 3.14 for π .)



- [A] 277.063 in.³ [B] 100.522 in.³ [C] 492.557 in.³ [D] 369.418 in.³

2. Spaceship Earth at Epcot Center in Florida is a 180 ft geosphere. Estimate its volume by assuming it is a sphere with diameter 180 ft.
3. A semicircle has a diameter with endpoints (0, 0) and (0, 6). Compare the volume of the solid created by rotating the semicircle 360° about the line $y = 3$ to that of the solid created by rotating the semicircle 360° about the y -axis.
4. Give the dimensions of a cylinder and sphere such that the volume of the sphere is twice that of the cylinder.
5. The inside of an ice cream cone has radius 5 cm and height 6 cm. Assuming that a half scoop of ice cream is in the shape of a hemisphere, and that it fits perfectly on top of the cone (same radius), find the total volume of ice cream. Use 3.14 for π and round your answer to the nearest tenth.

- [A] 418.7 cm³ [B] 680.3 cm³ [C] 442.0 cm³ [D] 732.7 cm³

6. A satellite is in the shape of a cylinder with two hemispheres fitted snugly on either end. If the diameter of the cylinder is 2 m and its length is 12 m, find the volume of the satellite. Express the answer in terms of π .
7. Compare the quantity in Column A with the quantity in Column B.

<u>Column A</u>	<u>Column B</u>
the volume of a cylinder with radius 2 and height 2	the volume of a sphere with radius 2

- [A] The quantity in Column A is greater. [B] The quantity in Column B is greater.
[C] The two quantities are equal.
[D] The relationship cannot be determined on the basis of the information supplied.

[1] C

[2] about 3 million ft³

The solid created by rotating about the line $y = 3$ is a hemisphere and has half the volume of the sphere
[3] created by rotating about the y-axis.

[4] Check students' work. Sample: cylinder - $r = 3$, $h = 2$ and sphere - $r = 3$

[5] A

[6] $13.3\pi \text{ m}^3$

[7] B