

Geometry - Area, Volume and Dissection Arguments - Test

Common Core G-GMD.A.1, G-GMD.A.3 · maths-pdf.fr/en/

Name: _____ Class: _____ Date: ____/____/____

This 45-minute test checks volume formulas and dissection arguments. It has 9 questions worth 20 points in total. Show every step of the work, label diagrams, and include units where they apply. Calculators are allowed unless the teacher says otherwise.

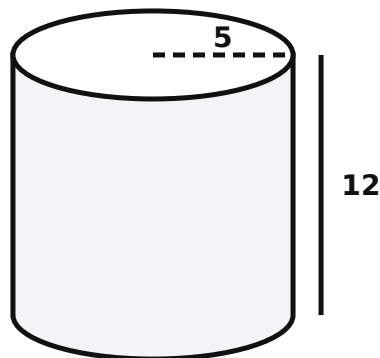
About this test

- Grade: Geometry
- Chapter: Area, Volume and Dissection Arguments
- Standards: G-GMD.A.1, G-GMD.A.3
- Time: 45 minutes
- Total: 20 points

Question 1 - Circle [2 pts]

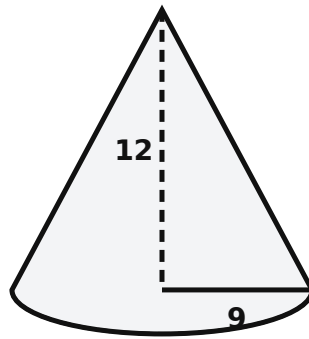
A circle has circumference 18π . Find its radius and area.

Question 2 - Cylinder [2 pts]



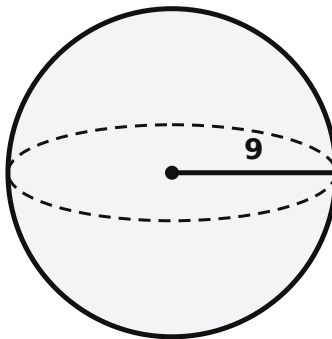
Cylinder.

Find the volume of the cylinder to the nearest tenth.

Question 3 - Cone [2 pts]

Cone.

Find the volume of the cone, in terms of pi.

Question 4 - Sphere [2 pts]

Sphere.

Find the volume of a sphere with diameter 18, in terms of pi.

Question 5 - Pyramid [2 pts]

A square pyramid has a base side of 12 and a height of 10. Find its volume.

Question 6 - Cavalieri [2 pts]

Two solids have the same height of 7 cm. At every height, the cross-sections have the same area. One solid is a right cylinder with radius 4 cm. Find the volume of both solids and name the principle.

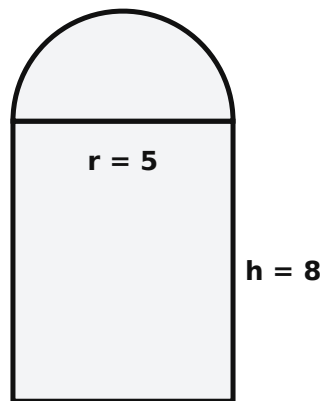
Question 7 - Missing dimension [2 pts]

A cone has volume 48π and radius 6. Find its height.

Question 8 - Dissection [3 pts]

- A cube has side 4. Find the volume of the pyramid whose base is a face and whose apex is the opposite vertex. (1 point)
- How many congruent pyramids like this make the cube? (1 point)
- Explain how this supports the one third in the pyramid formula. (1 point)

Question 9 - Composite solid [3 pts]



Silo.

A silo is a cylinder of radius 5 and height 8 topped by a hemisphere of radius 5. Find the total volume to the nearest tenth.