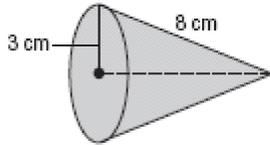


Geo Unit 11--Polyhedra and 3D Figures Study Guide

Refer to the figure below to answer the following questions. Round to the nearest tenth.

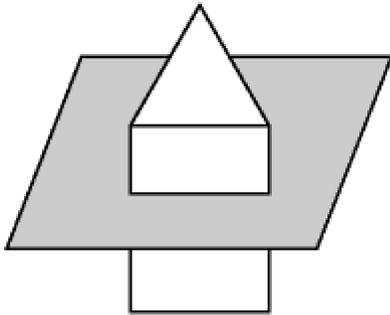


- Find the lateral area.
 - 75.4 cm^2
 - 103.7 cm^2
 - 131.9 cm^2
 - 150.8 cm^2
- Find the surface area.
 - 75.4 cm^2
 - 103.7 cm^2
 - 131.9 cm^2
 - 150.8 cm^2
- Find the volume.
 - 50.3 cm^3
 - 69.8 cm^3
 - 209.7 cm^3
 - 226.2 cm^3
- A right triangular pyramid has a 12-meter height and a base with legs that are 3 meters and 4 meters long. Find the volume of the triangular pyramid.
 - 144 m^3
 - 72 m^3
 - 48 m^3
 - 24 m^3
- A sphere has a 48-centimeter diameter. Find the volume of the sphere. Round to the nearest tenth.
 - $463,246.7 \text{ cm}^3$
 - $57,905.8 \text{ cm}^3$
 - $28,952.9 \text{ cm}^3$
 - 7238.2 cm^3
- Find the scale factor between the two similar cones.

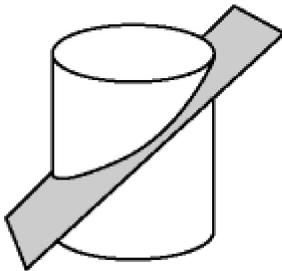
Two right circular cones are shown side-by-side. The smaller cone on the left has a height of 3 ft and a radius of 8 ft. The larger cone on the right has a height of 6 ft and a radius of 16 ft. Both cones have a right-angle symbol at the center of their bases, indicating they are right circular cones.

 - The ratio of the heights of two similar solids is 6:11. Find the ratio of their surface areas.

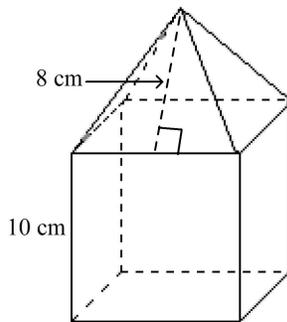
8. Find the shape resulting from the cross-section of the triangular prism.



9. Find the shape resulting from the cross-section of the cylinder.



10. The solid below is a composite of a cube and a square pyramid. The base of the solid is the base of the cube. Find the lateral area of the solid.

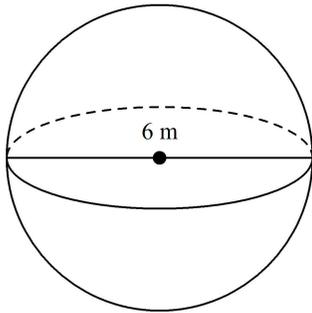


- 80 cm^2
- 660 cm^2
- 560 cm^2
- 720 cm^2

Determine whether each statement is true or false. If false, give a counterexample.

- Every great circle of a sphere passes through its center.
 - True
 - False, only one of a sphere's great circles passes through its center.
 - False, none of a sphere's great circles passes through its center.
 - False, exactly two of a sphere's great circles pass through its center.
- If a plane intersects a sphere so that it contains the center of the sphere, then that intersection will sometimes be a great circle.
 - True
 - False, the intersection will never be a great circle.
 - False, the intersection will always be a great circle.
 - False, the intersection of a plane and a sphere cannot contain the center of the sphere.
- A chord that contains the center of the sphere is a diameter of the sphere.
 - True
 - False, a chord cannot contain the center of the sphere.
 - False, a chord containing the center is a radius, not a diameter.
 - False, a sphere does not have a diameter.
- A tangent of a sphere is a line that intersects a sphere in exactly two points.
 - True
 - False, a tangent cannot intersect a sphere.
 - False, a tangent is a line that intersects the center of a sphere.
 - False, a tangent of a sphere is a line that intersects a sphere in exactly one point.

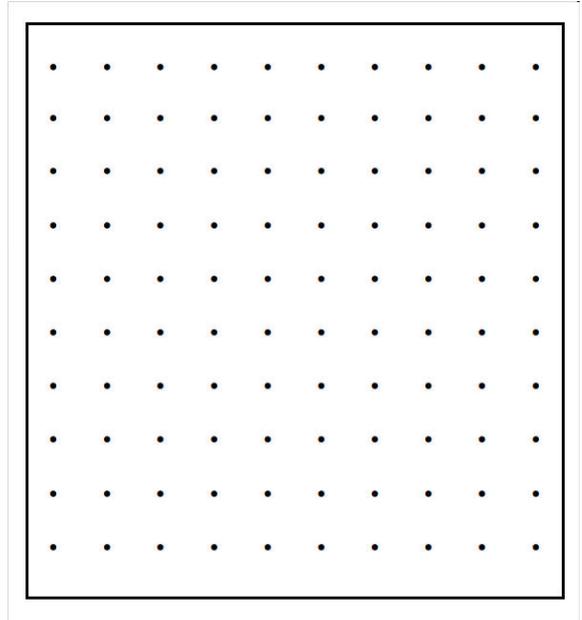
15. Find the surface area of the sphere. Use 3.14 for π . Round to the nearest tenth.



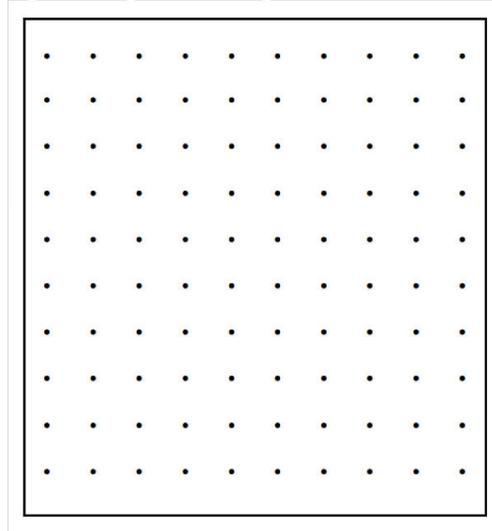
- a. 113 m^2
 - b. 339.1 m^2
 - c. 28.3 m^2
 - d. 36 m^2
16. Find the surface area of a sphere if the circumference of a great circle is 43.96 centimeters. Use 3.14 for π . Round to the nearest tenth.
- a. 4308.1 cm^2
 - b. 196 cm^2
 - c. 153.9 cm^2
 - d. 615.4 cm^2
17. Find the volume of a sphere that has a radius of 9.5 meters. Use 3.14 for π . Round to the nearest tenth.
- a. 3589.5 m^3
 - b. 2692.2 m^3
 - c. 377.8 m^3
 - d. 897.4 m^3

Sketch each solid using isometric dot paper.

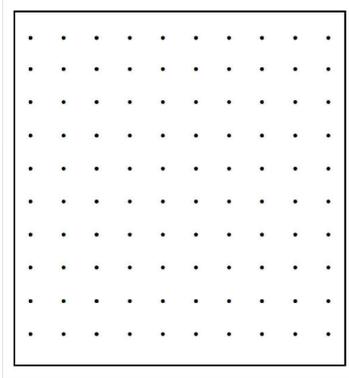
18. rectangular prism 5 units high, 5 units long, and 4 units wide



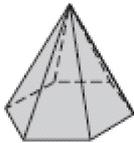
19. triangular prism 6 units high, with bases that are right triangles with legs 4 units and 5 units long



20. cube 6 units on each edge

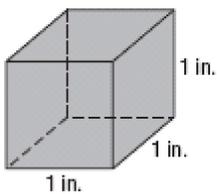


21. Sketch the shape of a horizontal cross section of the solid.



22. Find the lateral area of a triangular prism with a height of 8 centimeters, and with bases having sides that measure 4 centimeters, 5 centimeters, and 6 centimeters.

23. Find the surface area of the solid. Round to the nearest tenth.



24. Find the lateral area of a right cylinder with a diameter of 8.6 yards and a height of 19.4 yards. Round to the nearest tenth.

25. The surface area of a cylinder is 180π square inches and the height is 9 inches. Find the radius.

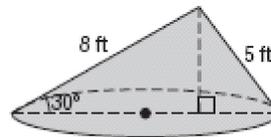
For the following questions, use a regular hexagonal pyramid with base edges of 10 inches and a slant height of 9 inches.

26. Find the lateral area.

27. Find the surface area.

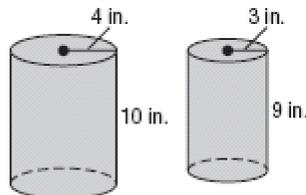
28. The volume of a rectangular prism is 120 cubic feet and the area of the base is 60 square feet. Find the length of a lateral edge of the prism.

29. Find the volume of the oblique cone. Round to the nearest tenth.



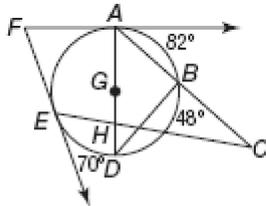
30. A sphere has a diameter of 7.36 inches long. Find the volume of the sphere. Round to the nearest tenth.

31. Determine whether these two cylinders are *congruent*, *similar*, or *neither*.

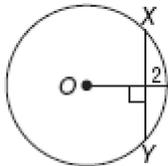


32. The ratio of the heights of two similar prisms is 2:7. The surface area of the smaller prism is 50 square meters. Find the surface area of the larger prism.

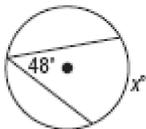
For the following questions, use $\odot G$ with \overrightarrow{FA} and \overrightarrow{FE} tangent at A and E .



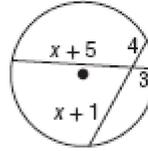
33. Find $m\angle ACE$.
34. Find $m\angle ADB$.
35. Find $m\angle AFE$.
36. Find the radius of $\odot O$ if $XY = 10$.



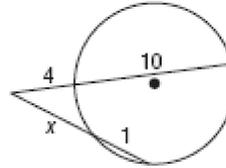
37. Find x .



38. Find x .



39. Find x .



40. Write the equation of the circle with its center at $(-7, 8)$ and radius of 9.