

Geometry

12.3 Surface Area of Pyramids and Cones (12.4)

Pyramids

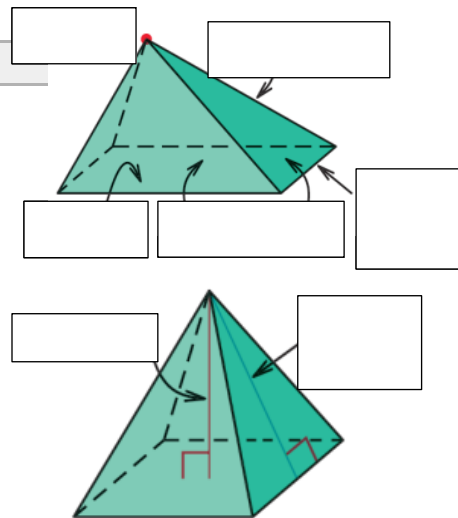
- All faces except one intersect at one point called _____
- The _____ is the face that does not intersect at the vertex
- _____ are faces that meet in the vertex
- _____ are edges that meet in the vertex
- _____ is a segment that goes from the vertex and is perpendicular to the base

Regular Pyramid

- Base is a _____
- The vertex is directly above the _____
- In a regular pyramid, all the lateral faces are _____
- The height of each lateral face is called the _____ (ℓ)

Lateral Area

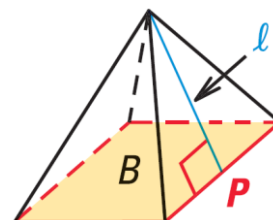
- $L =$ _____



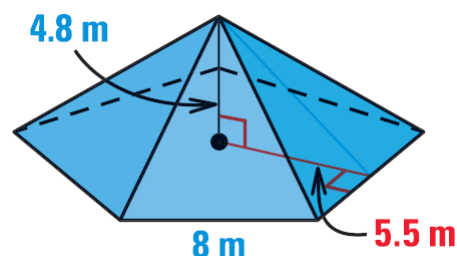
Surface Area of a Regular Pyramid

$$S = \text{_____}$$

Where B = base area, P = base perimeter, ℓ = slant height



Find the surface area of the regular pentagonal pyramid.



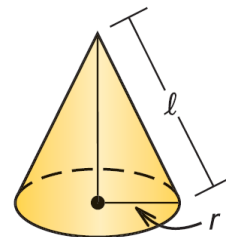
Cones

- Cones are just like pyramids except the base is a _____
- Lateral Area = _____

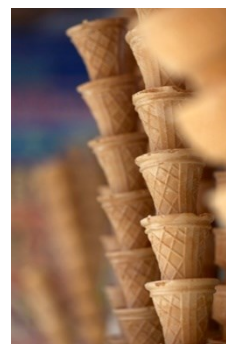
Surface Area of a Right Cone

$$S = \underline{\hspace{2cm}}$$

Where r = base radius, ℓ = slant height



The So-Good Ice Cream Company makes Cluster Cones. For packaging, they must cover each cone with paper. If the diameter of the top of each cone is 6 cm and its slant height is 15 cm, what is the area of the paper necessary to cover one cone?

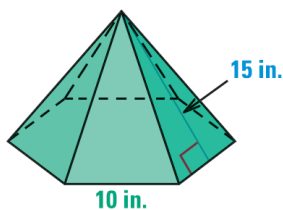


Assignment: Attached worksheet

Assignment:

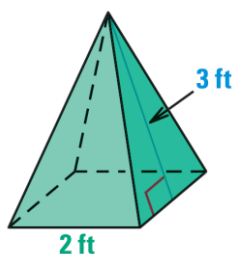
1. Compare the height and slant height of a right cone.

Find the area of each lateral face of the regular pyramid.



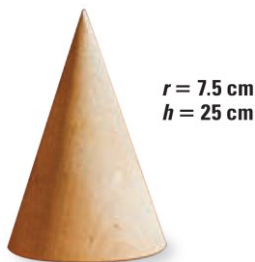
2.

Find the lateral area and surface area of the regular pyramid. Round your answers to two decimal places.

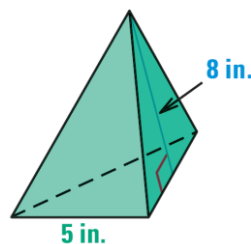


3.

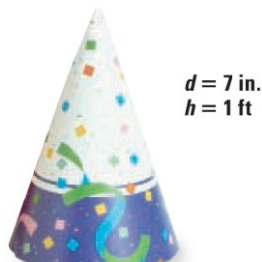
Find the lateral area of the right cone. Round your answer to two decimal places.



5.

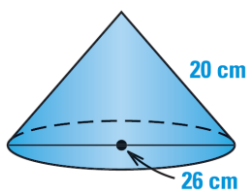


4.



6.

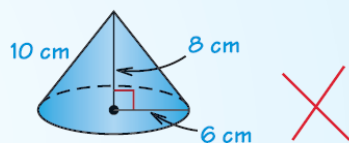
Find the surface area of the right cone. Round your answer to two decimal places.



7.

8. Describe and correct the error in finding the surface area of the right cone.

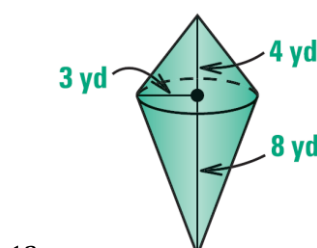
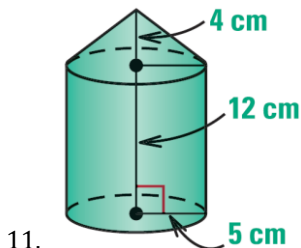
$$\begin{aligned} S &= \pi(r^2) + \pi r^2 \ell \\ &= \pi(36) + \pi(36)(10) \\ &= 396\pi \text{ cm}^2 \end{aligned}$$



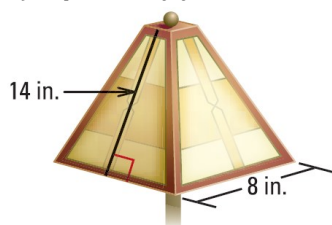
Sketch the described solid and find its surface area. Round your answer to two decimal places.

9. A right cone has a radius of 15 feet and a slant height of 20 feet.
10. A regular pyramid has a slant height of 24 inches. Its base is an equilateral triangle with a base edge length of 10 inches.

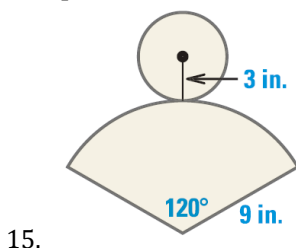
Find the surface area of the solid. The pyramids are regular and the cones are right. Round your answers to two decimal places, if necessary.



13. A right cone with a base of radius 4 inches and a regular pyramid with a square base both have a slant height of 5 inches. Both solids have the same surface area. Find the length of a base edge of the pyramid. Round your answer to the nearest hundredth of an inch.
14. A glass lampshade is shaped like a regular pyramid.
- Approximate the lateral area of the lampshade shown.
 - Explain why your answer to part (a) is not the exact lateral area.

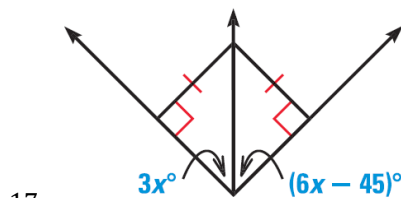
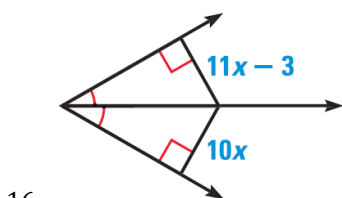


Name the figure that is represented by the net. Then find its surface area. Round your answer to two decimal places.



Mixed Review

Find the value of x .



18. Find the area of the polygon.

