## Lesson 11.3 SA of Pyramids \& Cones

A pyramid is a polyhedron in which one face (the base) can be any polygon and the other faces (the lateral faces) are triangles that meet a common vertex. A regular pyramid is a pyramid whose base is a regular polygon and whose lateral faces are congruent isosceles triangles. The slant height is the length of the altitude of a lateral face of the pyramid.


1 A square pyramid has base edges of 5 m and a slant height of 3 m . What is the surface area of the pyramid?


Ex. The Pyramid of Cestius is located in Rome. Use the dimensions in the figure, what is the lateral area of the Pyramid of Cestius? Round to the nearest square meter?

Surface Area of Pyramids: $1 / 2 p l+B$ where $p$ is perimeter, $l$ is slant height, and $B$ is the area of the base.

Ex. What is the surface area of the hexagonal pyramid?


2 Suppose the slant height of a pyramid is doubled. How does this affect the lateral area of the pyramid?

Surface Area of a Cone: $S A=\pi r l+\pi r^{2}$ where $r$ is the radius and $I$ is the slant height.

Ex. What is the surface area of the cone in terms of pi?


3 What is the surface area of a cone that has a radius of 16 m and a slant height of 28 m , round to the nearest tenth?

4 Suppose the radius of a cone is halved, but the slant height remains the same. How does this affect the lateral area of the cone?

Ex. In a chemistry lab experiment, you use the conical filter funnel shown at the right. How much filter paper do you need to line the funnel?


