

Lesson Three – Surface Areas of Right Pyramids and Right Cones

Recall:

Perimeter of a Square:

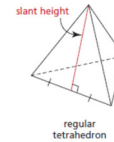
Area of a Square:

Pythagorean Theorem:

_____ – are 3-dimensional objects that have triangular faces and a base that is a polygon.

_____ – is a 3-dimensional object that has a circular base and a curved surface.

Tetrahedron –



Apex –

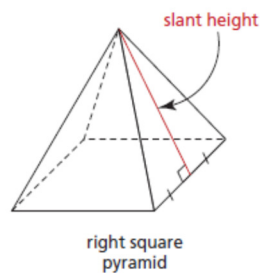
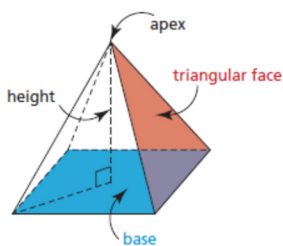
_____ – is the perpendicular distance from the apex to the centre of the base.

Regular Polygon – a polygon that has all sides equal and all angles equal.

Lateral Area – the surface area of an object, not including the base (just the sides)

Slant Height –

Right Pyramid

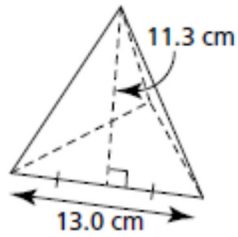


If the base is a regular polygon, the triangular faces are congruent.

To find the surface area of a Right Pyramid, you can find the area of each side, and then add together.

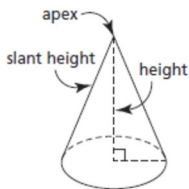
Surface Area of a Right Pyramid with a Regular Polygon Base

Example 1: Find the lateral area of this right pyramid to the nearest square unit.



Example 2: Calculate the surface area of a right square pyramid with a base length of 5 cm and a perpendicular height of 12 cm.

Surface Area of a Right Circular Cone



Surface Area of a Right Circular Cone

Example 1: A right cone has a base radius of 4 m and a height of 10 m. Calculate the surface area of this cone to the nearest square metre.

Example 2: The lateral area of a cone is 220 cm^2 . The diameter of the cone is 10 cm. Determine the height of the cone to the nearest tenth of a centimeter.