

Notes for Lesson 12-2: Surface Area and Volume of Pyramids

A **regular pyramid** has several important features:

- 1) a regular polygon for the base
- 2) all lateral faces are isosceles triangles
- 3) the slant height (l) is the height of each triangular face
- 4) the altitude of the pyramid meets the base at its center



The **lateral area** of a regular pyramid is $LA = nF$ where n = the number of faces and F = area of one face

The **total area** of a regular pyramid is $TA = LA + B$ where B = the area of the base

The **volume** of a regular pyramid is $V = \frac{1}{3}Bh$

Examples: Find the LA, TA, and V of each.

10
12
13
5

$$L = \frac{1}{2}(4 \cdot 10)(13)$$

$$= 260 \text{ units}^2$$

8
8
8
8

$$V = \frac{1}{3}(100)(12)$$

$$= 400 \text{ units}^3$$

$$TA = 260 + 100$$

$$= 360 \text{ units}^2$$