Flash Cards: Volume of Pyramids and Cones

Directions: For each three-dimensional figure, draw the 'net' or the surfaces of the figure when they are laid out flat. Label all dimensions.

1. Find the volume of this figure. A pyramid with a square base. The base measures 10 inches by 10 inches, the height of the pyramid is 7.8 inches, and the slant height of the pyramid is 11 inches.

2. Find the volume of this figure. A pyramid with a square base. The base measures 15 inches by 15 inches, the height of the pyramid is 10 inches, and the slant height of the pyramid is not given.

3. Find the volume of this figure. A cone with radius 20 feet and height of 30 feet.

4. Find the volume of a cone with height 18 centimeters and slant height 19.5 centimeters.

Answers:

1. **1. Decide which surface is the base.**

The base is a square with dimensions 10 by 10.

2. Find the area of this base.

$A = s \cdot s = (10)(10) = 100$

3. Use the formula to find the volume.

V = one-third times the area of base times the height
V = one-third times 100 times 7.8 equals 260

4. Label the answer 'cubic units'.

The volume is 260 in^3.

2. **1. Decide which surface is the base.**

The base is a square with dimensions 15 by 15.

2. Find the area of this base.

$A = s \cdot s = (15)(15) = 225$

3. Use the formula to find the volume.

V = one-third times the area of base times the height
V = one-third times 225 times 7.10 equals 750

4. Label the answer 'cubic units'.

The volume is 750 in^3.

3. **1. Decide which surface is the base.**

The base is a circle with radius 20.

2. Find the area of this base.

$A = \pi r^2 = \pi(20)^2 = 400\pi$

3. Use the formula to find the volume.

V = one-third times the area of base times the height
V = one-third times 400 pi times 30 equals 4000 pi

4. Label the answer 'cubic units'.

The volume is 4000π ft^3.
This is approximately 12,566.37 ft^3.

4. **1. Decide which surface is the base.**

The base is a circle with radius 7.5 (found in first set of flash cards).

2. Find the area of this base.

$A = \pi r^2 = \pi(7.5)^2 = 56.25\pi$

3. Use the formula to find the volume.

V = one-third times the area of base times the height
V = one-third times 56.25 pi times 18 equals 337.5 pi

4. Label the answer 'cubic units'.

The volume is 337.5π ft^3.
This is approximately 1060.29 cm^3.