**Flash Cards: Finding the Volume of Prisms and Cylinders**

**Directions:** For each three-dimensional figure, find the volume.

1. A rectangular prism with dimensions 4 by 5 by 3.

2. A rectangular prism with front face that has congruent sides measuring 6.5 and third dimension is 2.7.

3. A triangular prism with right triangular face with legs measuring 8 feet and 15 feet, and distance between triangular faces measuring 3 feet.

4. A triangular prism with equilateral triangular face with sides measuring 7 inches and distance between triangular faces measuring 3 inches.

5. A cylinder with radius 15 centimeters and height 21 centimeters.

6. A cylinder with diameter 9 feet and height 7.8 feet.

Answers:

1. **1. Decide which surfaces are the bases.  Recall that the bases are the same size and shape and are parallel to each other.**

The base of this figure is a rectangle that is 5 by 3.

**2. Find the area of one of these bases.**

A = (5)(3) = 15

**3. Multiply the area of the base times the height of the figure.**

The height of this figure is 4.
V = (area of base)(height)
V = (15)(4)
V = 60

**4. Label the answer 'cubic units'.**

The volume is 60 units$^3$.

2. **1. Decide which surfaces are the bases.  Recall that the bases are the same size and shape and are parallel to each other.**

The base of this figure is a rectangle that is 6.5 by 2.7.

**2. Find the area of one of these bases.**

A = (6.5)(2.7) = 17.55

**3. Multiply the area of the base times the height of the figure.**

The height of this figure is 6.5.
V = (area of base)(height)
V = (17.55)(6.5)
V = 114.075

**4. Label the answer 'cubic units'.**

The volume is 114.075 units$^3$.

3. **1. Decide which surfaces are the bases. Recall that the bases are the same size and shape and are parallel to each other.**

The base of this figure is a right triangle. These are the sides that are the same size and shape and are parallel to each other. The dimensions are base 8 ft and height 15 ft.

**2. Find the area of one of these bases.**

A equals one-half b times h. A equals one-half 8 times 15. A equals 60.

**3. Multiply the area of the base times the height of the figure.**

The height of the figure is the distance between the bases. The height of this figure is 3 ft.
V = (area of base)(height)
V = (60)(3)
V = 180

**4. Label the answer 'cubic units'.**

The volume is 180 ft$^3$.

4. **1. Decide which surfaces are the bases. Recall that the bases are the same size and shape and are parallel to each other.**

The base of this figure is an isosceles triangle. These are the sides that are the same size and shape and are parallel to each other. The dimensions are base 7 in and height 6.06 in. (The height of the triangle was found in the first set of flash cards.)

**2. Find the area of one of these bases.**

A equals one-half b times h. A equals one-half 7 times 6.06. A equals 21.21.

**3. Multiply the area of the base times the height of the figure.**

The height of the figure is the distance between the bases. The height of this figure is 3 ft.

V = (area of base)(height)
V = (21.21)(3)
V = 63.63

**4. Label the answer 'cubic units'.**

The volume is 63.63 in$^3$.

5. **1. Decide which surfaces are the bases. Recall that the bases are the same size and shape and are parallel to each other.**

The base of this figure is a circle with radius 15.

**2. Find the area of one of these bases.**

$A = \pi r^2$
$A = \pi (15)^2$
$A = 225\pi$

**3. Multiply the area of the base times the height of the figure.**

The height of the figure is the distance between the bases. The height of this figure is 21cm.

V = (area of base)(height)
V = (225π)(21)
V = 4725π

**4. Label the answer 'cubic units'.**

The volume is 4725π cm$^3$.
(This is approximately 14,844.03 cm$^2$)

6. **1. Decide which surfaces are the bases. Recall that the bases are the same size and shape and are parallel to each other.**

The base of this figure is a circle with diameter 9. This means that the radius is 4.5.

**2. Find the area of one of these bases.**

$A = \pi r^2$
$A = \pi (4.5)^2$
$A = 20.25\pi$

**3. Multiply the area of the base times the height of the figure.**

The height of the figure is the distance between the bases. The height of this figure is 7.8cm.

V = (area of base)(height)
V = (20.25π)(7.8)
V = 157.95π

**4. Label the answer 'cubic units'.**

The volume is 157.95π ft$^3$.
(This is approximately 496.21 ft$^3$.)