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### U13 CW #3

### *Applying Radicals - Volume of Cylinders, Cones, and Spheres Finding the Missing Part*

In this lesson we will finding the Area, Radius, and or Diameter of various 3D shapes. We will practice using the skills we have learned so far this year, including working with exponents and radicals, to find the missing variable. Solve the literal equation for the missing part.

Volume of a Cylinder – What is the formula? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Directions**: Find the missing measurement for each cylinder described below. Draw and label what you know. Show the equation you are using to solve for the missing measure. Be sure to show all steps and label your answer in units.

|  |  |
| --- | --- |
| 1. The volume of a cylinder is 117.1 cubic feet, and its height is 15 ft. Find the diameter of the base of the cylinder.
 | 1. The volume of a cylinder is 4,224.8 cubic millimeters, it has a diameter of 16.4 mm, find the height of the cylinder.
 |

**Directions:** *For each problem given below draw and label a picture that describes each cylinder*. **Then** solve the problem.

1. An ice cream company wants to package a pint of ice cream in a circular cylinder that is 4 inches high. A pint is 16 fluid ounces and 1 fluid ounce is 1.8 cubic inches. What does the radius of the base circle have to be?

Volume of a Cone – What is the formula? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Directions**: Find the missing measurement for each cone described below. Draw and label what you know. Show the equation you are using to solve for the missing measure. Be sure to show all steps and label your answer in units.

|  |  |
| --- | --- |
| 1. The volume of a cone is 122.8 cubic inches, and its height is 4.5 inches. Find the diameter of the base of the cone.
 | 1. The volume of a cone is 188.5 cubic ft, it has a diameter of 12 ft, find the height of the cylinder.
 |

**Directions:**For each problem given below draw and label and picture that describes each cone. **Then** solve the problem.

1. Salt and sand mixtures are often used on icy roads. When the mixture is dumped from a truck into the staging area, it forms a cone-shaped mound with a volume of 240.69 ft3 and a radius of 5.2 ft. What is the height of the salt-sand mixture?

Volume of a Sphere – What is the formula? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Directions**: Find the missing measurement for each cone described below. Draw and label what you know. Show the equation you are using to solve for the missing measure. Be sure to show all steps and label your answer in units.

|  |  |
| --- | --- |
| 1. The volume of a sphere is 6882.3 in3; find the diameter of the sphere.
 | 1. The volume of a sphere is 1436.8 ft3; find the radius of the sphere.
 |

**Directions**: For each problem given below draw and label a picture that describes each sphere. **Then** solve the problem. Round to the nearest hundredth if necessary.

1. If a golf ball has a volume of 82.45 cm2. A tennis ball has a volume of 1259.83 cm2. Find the difference between the diameter of the two balls.