**Examples: Basic Surface Area & Volume of**

**Cylinders, Cones, and Spheres**

**Cylinders:**

|  |  |  |
| --- | --- | --- |
| Surface Area:SA = 2πr2 + 2πrh | Lateral Area:LA = 2πrhNO BASES! | Volume: V=BH B = AREA of BASE B= πr2H= Height connecting two bases. |

Cylinder Example1:

Find the surface area and volume of the cylinder. Keep in terms of pi and round to the nearest thousandth.





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**** Cones:**

|  |  |  |
| --- | --- | --- |
| Surface Area: SA= $πr^{2}+πrl$ | Lateral Area: LA= $πrl$ | Volume: $$V=\frac{1}{3}BH$$B = AREA of BASE B= πr2H= Height perpendicular to the base.  |
|  |  |  |

Find the volume (round to the nearest thousandth) and surface area (keep in terms of pi) of the solid.

Cone Example 2:



exact

rounded

|  |  |
| --- | --- |
| Surface Area:SA = 4πr2 | Volume: V = $\frac{4}{3}$πr3 |

**Spheres**



Find the volume and surface area of the sphere. Keep in terms of pi.



**Sphere Example 3:**



**In Class Practice:**

**Directions:** Identify each figure, find the surface area and volume of the following figures. You must write the formula you used first. Keep all answers in terms of pi, then show the rounded value to the nearest thousandth.

1.

 Identify: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Surface Area: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Volume: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. 

rounded

exact



3.