**9.1 Solid Figures**

**Goal: Identify and name solid figures.**

**Solid:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ shapes

**Polyhedron:** a solid formed by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Faces**: the plane \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a polyhedron.

**Edges**: the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ joining the vertices of a polyhedron.

**Bases**: the top and/or bottom planes of a figure. A prism has \_\_\_\_\_ bases. A pyramid has \_\_\_\_\_ base.

**Tell whether the solid is a polyhedron. Then name the solid and find the number of faces, vertices, and edges.**

a) Polyhedron? \_\_\_\_\_\_\_\_\_ b) Polyhedron? \_\_\_\_\_\_\_\_\_ c) Polyhedron? \_\_\_\_\_\_\_\_\_

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

F: \_\_\_\_\_\_ V: \_\_\_\_\_\_ E: \_\_\_\_\_\_ F: \_\_\_\_\_\_ V: \_\_\_\_\_\_ E: \_\_\_\_\_\_ F: \_\_\_\_\_\_ V: \_\_\_\_\_\_ E: \_\_\_\_\_\_

d) Polyhedron? \_\_\_\_\_\_\_\_\_ e) Polyhedron? \_\_\_\_\_\_\_\_\_ f) Polyhedron? \_\_\_\_\_\_\_\_\_

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

F: \_\_\_\_\_\_ V: \_\_\_\_\_\_ E: \_\_\_\_\_\_ F: \_\_\_\_\_\_ V: \_\_\_\_\_\_ E: \_\_\_\_\_\_ F: \_\_\_\_\_\_ V: \_\_\_\_\_\_ E: \_\_\_\_\_\_

g) Polyhedron? \_\_\_\_\_\_\_\_\_ h) Polyhedron? \_\_\_\_\_\_\_\_\_ i) Polyhedron? \_\_\_\_\_\_\_\_\_

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

F: \_\_\_\_\_\_ V: \_\_\_\_\_\_ E: \_\_\_\_\_\_ F: \_\_\_\_\_\_ V: \_\_\_\_\_\_ E: \_\_\_\_\_\_ F: \_\_\_\_\_\_ V: \_\_\_\_\_\_ E: \_\_\_\_\_\_



**Sketch each figure.**

a) a rectangular prism b) a triangular prism c) cylinder

d) cone e) a rectangular pyramid f) a pentagonal pyramid

|  |
| --- |
| **Euler’s Formula** |
| **F + V = E + 2** |

**Use Euler’s Formula to find the number of faces, edges, or vertices.**

a) A pyramid has 9 faces and 9 vertices. How many edges does it have?

b) A prism has 8 faces and 18 edges. How many vertices does it have?

c) A polyhedron has 15 edges and 7 vertices. How many faces does it have?

**9.2 Surface Area of Prisms and Cylinders**

**Goal: Find the surface areas of prisms and cylinders.**

**Prism:** a polyhedron with two congruent \_\_\_\_\_\_\_\_\_\_\_ that lie in parallel planes

**Surface area:** on a polyhedron, the sum of the \_\_\_\_\_\_\_\_\_\_\_\_\_ of its faces

**Cylinder**: a solid with two congruent \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ bases that lie in parallel planes

\*Note: Surface area is always labeled \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |
| --- | --- |
| **Surface Area of a Prism** | **Surface Area of a Cylinder** |
| $$SA = 2B + Ph$$ | $$SA = 2πr^{2}+ 2πrh$$ |

**Find the surface area of each figure**

a) Shape of base: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Area of Base (B): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Perimeter of Base (P): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Height of shape (h): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

b) Shape of base: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Area of Base (B): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Perimeter of Base (P): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Height of shape (h): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

c) Shape of base: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Area of Base (B): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Perimeter of Base (P): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Height of shape (h): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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



d) Shape of base: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Area of Base (B): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Perimeter of Base (P): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Height of shape (h): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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



e) Shape of base: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Area of Base (B): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Circumference of Base (P): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Height of shape (h): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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



f) Shape of base: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Area of Base (B): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Circumference of Base (P): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Height of shape (h): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

 **9.3 Surface Area of Pyramids and Cones – Day 1**

**Goal: Find the surface area of pyramids and cones.**

|  |  |
| --- | --- |
| **Surface Area of a Pyramid** | **Surface Area of a Cone** |
| $$SA = B +\frac{1}{2}Pl$$ | $$SA =πr^{2}+ πrl$$ |

**Find the surface area of each figure.**

a) Shape of the base: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Area of the base (B): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Perimeter of the base (P): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Slant height (l): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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



b) Shape of the base: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Area of the base (B): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Perimeter of the base (P): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Slant height (l): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

c) Shape of the base: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Area of the base (B): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Perimeter of the base (P): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Slant height (l): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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



d) Shape of the base: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Radius (r): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Area of the base ($πr^{2})$: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Slant height (l): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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



e) Shape of the base: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Radius (r): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Area of the base ($πr^{2})$: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Slant height (l): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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



f) Shape of the base: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Radius (r): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Area of the base ($πr^{2})$: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Slant height (l): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

**9.3 Surface Area of Pyramids and Cones – Day 2**

**Goal: Find the surface area of pyramids and cones.**

**\*If the slant height of a cone or pyramid is not given, you just first use the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to find it.**

|  |  |
| --- | --- |
| **Surface Area of a Pyramid** | **Surface Area of a Cone** |
| $$SA = B +\frac{1}{2}Pl$$ | $$SA =πr^{2}+ πrl$$ |

**Find the surface area of each figure.**

a) Shape of the base: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Radius (r): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Area of the base ($πr^{2})$: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Slant height (l): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

b) Shape of the base: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Radius (r): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Area of the base ($πr^{2})$: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Slant height (l): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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



c) Shape of the base: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Area of the base (B): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Perimeter of the base (P): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Slant height (l): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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



d) Shape of the base: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Area of the base (B): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Perimeter of the base (P): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Slant height (l): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

e) Shape of the base: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Area of the base (B): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Perimeter of the base (P): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Slant height (l): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

**9.4 Volume of Prisms and Cylinders**

**Goal: Find the volumes of prisms and cylinders.**

**Volume:** the number of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ units contained in a solids interior.

\*Note: Volume is always labeled \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |
| --- | --- |
| **Volume of a Prism** | **Volume of a Cylinder** |
| $$V = Bh$$ | $$V=πr^{2}h$$ |

**Find the volume of each solid.**

a) Shape of the base: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Area of the base (B): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Height (h): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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



b) Shape of the base: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Area of the base (B): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Height (h): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

c) Shape of the base: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Area of the base ($πr^{2}$): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Height (h): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

d) Shape of the base: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Area of the base (B): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Height (h): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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



e) Shape of the base: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Area of the base ($πr^{2}$): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Height (h): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

f) Shape of the base: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Area of the base (B): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Height (h): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

**9.5 Volume of Pyramids and Cones**

**Goal: Find the volumes of pyramids and cones.**

|  |  |
| --- | --- |
| **Volume of a Pyramid** | **Volume of a Cone** |
| $$V=\frac{1}{3}Bh$$ | $$V=\frac{1}{3}πr^{2}h$$ |

**Find the volume of each figure.**

a) Shape of the base: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Area of the base (B): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Height (h): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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



b) Shape of the base: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Area of the base (B): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Height (h): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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



c) Shape of the base: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Area of the base ($πr^{2}$): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Height (h): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

d) Shape of the base: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Area of the base (B): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Height (h): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

e) Shape of the base: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Area of the base ($πr^{2}$): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Height: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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



f) Shape of the base: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Area of the base ($πr^{2}$): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Height: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

**9.5 Volume of Pyramids and Cones – Day 2**

**Goal: Find the volumes of pyramids and cones.**

**\*If the height of a cone or pyramid is not given, you just first use the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to find it.**

|  |  |
| --- | --- |
| **Volume of a Pyramid** | **Volume of a Cone** |
| $$V=\frac{1}{3}Bh$$ | $$V=\frac{1}{3}πr^{2}h$$ |

**Find the volume of each figure.**

a) Shape of the base: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Area of the base (B): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Height (h): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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



b) Shape of the base: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Area of the base ($πr^{2}$): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Height (h): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

c) Shape of the base: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Area of the base (B): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Height (h): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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



d) Shape of the base: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Area of the base ($πr^{2}$): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Height (h): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

**9.6 Surface Area and Volume of Spheres**

**Goal: Find the surface area and volume of spheres.**

|  |  |  |
| --- | --- | --- |
| **Surface Area of a Sphere** | **Volume of a Sphere** | **Volume of a Hemisphere** |
| $$SA=4πr^{2}$$ | $$V=\frac{4}{3}πr^{3}$$ | $$V=\frac{2}{3}πr^{3}$$ |

**Find the surface area of each sphere.**

a) Radius: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Radius squared (r2): \_\_\_\_\_\_\_\_\_\_\_

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



b) Radius: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Radius squared (r2): \_\_\_\_\_\_\_\_\_\_\_

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



c) Radius: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Radius squared (r2): \_\_\_\_\_\_\_\_\_\_\_

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

**Find the volume of each sphere or hemisphere.**

a) Radius: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Radius cubed (r3): \_\_\_\_\_\_\_\_\_\_\_\_

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



b) Radius: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Radius cubed (r3): \_\_\_\_\_\_\_\_\_\_\_\_

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

c) Radius: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Radius cubed (r3): \_\_\_\_\_\_\_\_\_\_\_\_

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

d) Radius: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Radius cubed (r3): \_\_\_\_\_\_\_\_\_\_\_\_

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