Ch. 11 Notes: SA and Volume

DRHS

11.1 Notes: Volume of Prisms and Cylinders Objectives:

- Students will be able to find the volume of a prism.
- Students will be able to find the volume of a cylinder.

Exploration: Watch this video about the volume of a rectangular prism: <u>https://www.youtube.com/watch?v=hytONaoJjc0</u>

Then explain in words how you would find the volume of the prism shown:







8) A rectangular prism has volume of 24 cm^3 . The length and width of the prism is 5 cm and 3 cm. Find the height of the prism.

9) Jessica made soup, and the soup had a volume of 30 in^3 . She poured the soup into a container shaped like a rectangular prism, and the length and width of the container is 2 inches by 3 inches. The soup completely filled the container perfectly (wow!) \bigcirc What is the height of the container?

Geometry		Ch. 11 Notes: SA and Volume	
	Cylinder	A cylinder is a solid figure with two circular bases that are parallel.	
	Volume of a Cylinder	$\mathbf{V} = \pi r^2 h$	

For #10–13: Find the volume of each solid, in the requested form.

10) in terms of pi



You try #12 – 13!

12) in terms of pi



13) rounded to one decimal place

11) rounded to one decimal place



8 km

15 km

14) A cylinder has volume of $100\pi in^3$ and a height of 4 inches. Find the radius of the cylinder.

Geometry Ch. 11 Notes: SA and Volume DRHS **11.2 Notes: Volume of Pyramids and Cones Objective:** • Students will be able to find the volume of cones and pyramids. vertex A cone is a solid with one height base and a vertex. slant height Cone The height, radius, and slant height of a cone form a _____ triangle. radius

Exploration: Watch this video (until time 3:24) to observe the relationship between the volume of a cylinder and the volume of a cone.

<u>https://www.youtube.com/watch?v=xwPiA0COi8k</u> Given that the volume of a cylinder is $V = \pi r^2 h$, then how could you find the volume of a cone? What formula could you use?



For #1-2: Find the volume of each cone, in the desired form.

1) in terms of pi 2) rounded to one decimal place







Ch. 11 Notes: SA and Volume

DRHS

For #6 –11: Find the volume of each square pyramid. If needed, round to one decimal place.







You try #9-11!







Ch. 11 Notes: SA and Volume

DRHS

11.3 Notes: Spheres and Cubes Objectives:

- Students will be able to find the surface area and volume of a sphere.
- Students will be able to find the surface area and volume of a cube.



For #1 – 4: Find the volume and surface area of each sphere, in the requested form.

1) in terms of pi





2) rounded to one decimal place

You try #3-4!

3) rounded to one decimal place



4) in terms of pi





6) A sphere has surface area of $100\pi in^2$. What is the radius of the sphere?

7) For the sphere referenced in #6, what is the volume of the sphere, rounded to one decimal place?





Ch. 11 Notes: SA and Volume

DRHS

11.4 Notes: Surface Area

Objectives:

- Students will be able to find the surface area of a solid by using nets.
- Students will be able to find the surface area of a solid by using formulas.

Exploration: Go to this link to explore surface area of various solids:

https://www.geogebra.org/m/wP2xJt64#material/c8ptXZ2w

Click on various shapes on the left side of the screen. Explore the page as you "unfold" the surface area of each solid figure.



1) Find the surface area of the rectangular prism shown by examining its net.



You Try! 2) Find the surface area of the rectangular prism shown by examining its net.





For #3–6: Find the surface area of each solid. For cylinders, leave your answer in terms of pi.





You try #5 – 6! 5)



Geometry		Ch. 11 Notes: SA and Volume D	
	Surface Area of a Pyramid	$SA = B + \frac{1}{2}Pl$	Height of a pyramid / Slant Height of a pyramid
	Surface Area of a Cone	$SA = \pi r^2 + \pi r l$	h

For #7–10: Find the surface area of each solid. For cones, leave your answer in terms of pi.







