Geometry B Live Lesson Class

U6L10 – Unit 6 Test Review

Agenda

1. Review topics and problems from Unit 6 to review for the upcoming test.

2. Use the 2-column note system to take better notes in math class. Bring your math notebook and pen or pencil to each math LiveLesson class.

2-Column Notes Template

1. Announcements/To Do's	1. Write down important details.
2. School-Wide Learner Outcomes	2. What are you going to work on this week?
3. LL Objectives	
4. Vocabulary words	4. Definitions (fill in as we go)
5. Problems	5. Steps to solving problems
6. Summary (End of class)	6. 1 or 2 sentences about the LL class.

Reminders and To – Do's

Information

1. Complete 1 math lesson per day.

2. Check your WebMail every day

3. Be prepared to spend 4 - 6 hours per day on schoolwork.

4. Remind your Learning Coach to take daily attendance

What to do

1. Go to your Planner in Connexus to find the math lesson for the day

2. Go to Connexus to find WebMail

3. Complete lessons for the day from your Planner. Do not get behind on lessons.

4. Have your Learning Coach log into Connexus daily.

Reminders and To – Do's

Information

5. Go to the Message Board first for information about our math class.

6. Contact Mr. Elizondo for math questions.

Remember: You need at least 2 phone calls with Mr. Elizondo per semester.

What to do

6. Call (559) 549 - 3244 and leave a voicemail if call is not answered.

Make an appointment at: https://elizondo.youcanbook.me

Send a WebMail

U6L10 – Objectives

- Review lesson material associated with the surface area and volume to prepare for the unit test

U6L10 – Vocabulary, page 1

- altitude

- base

- center of a sphere

- circumference of a sphere

- composite space figure

- cone

- cross section

- cylinder

- diameter of a sphere

- edge

- face

- great circle

- height

- hemisphere

- lateral area

- lateral face

U6L10 – Vocabulary, page 2

- oblique cylinder
- oblique prism
- polyhedron
- prism
- pyramid
- radius of a sphere
- regular pyramid
- right cone

- right cylinder
- right prism
- similar solids
- slant height
- sphere
- surface area
- vertex
- volume

U6L10 – Things to Know for Unit 6 Test

- Euler's formula
- Cross sections
- Lateral area and surface area
- Volume
- Composite figures
- Similar figures (similarity ratio/scale factor)
- Ratio of areas and volumes

U6L10 - Formulas

p is perimeter of base

B is area of base

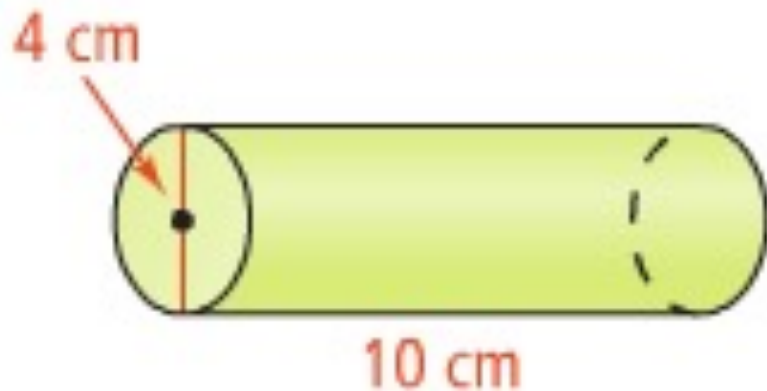h is height of prism, cylinder, pyramid, or cone

Shape	Lateral Area	Surface Area	Volume
Prism	$LA\ =\ ph$	$SA\ =\ LA\ +\ 2B$	$V = Bh$
Cylinder	$LA\ =\ 2\pi rh$	$SA = 2\pi rh + 2\pi r^2$	$V = \pi r^2 h$
Pyramid	$LA = \dfrac{1}{2}pl$	$SA\ = LA + B$	$V = \dfrac{1}{3}Bh$
Cone	$LA\ =\ \pi rl$	$SA\ = LA + B$	$V = \dfrac{1}{3}\pi r^2 h$
Sphere	n/a	$SA = 4\pi r^2$	$V = \dfrac{4}{3}\pi r^3$

U6L10 – Volume of a Cylinder

Find the volume of the cylinder in terms of π.

4 cm

10 cm

$$V = \pi r^2 h$$

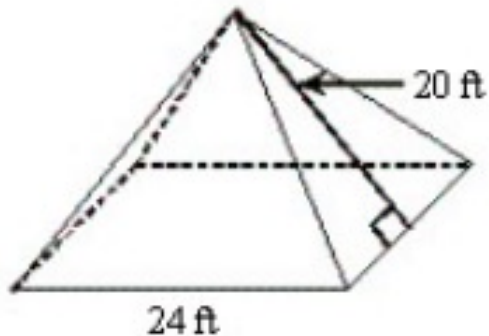$$V = \pi (2)^2 (10)$$

$$V = \pi (4)(10)$$

$$\boldsymbol{V = 40\pi \; cm^3}$$

U6L10 – Volume of a Pyramid

Find the volume of the pyramid. Round your answer to the nearest cubic foot.

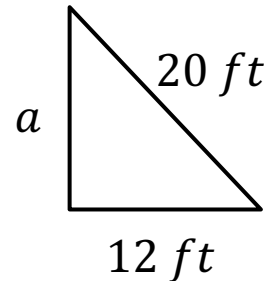24 ft

20 ft

1) Find B (The area of the base).

$$B = 24 \cdot 24$$

$$B = 576 \ ft^2$$

2) Find the height of the pyramid

a 20 ft

12 ft

$$a^2 + b^2 = c^2$$

$$a^2 + 12^2 = 20^2$$

$$a^2 + 144 = 400$$

$$a^2 = 256 \quad a = 16$$

3) Find the volume of your pyramid

$$V = \frac{1}{3}(576)(16)$$

$$\boldsymbol{V = 3072 \ ft^3}$$

U6L10 – Volume of Cones

Two cones have the same volume. For the first cone, the radius is 6 in. and the height is 18 in. The second cone has a height of 8 in. What is the radius of the second cone?

$V = \dfrac{1}{3}\pi r^2 h$

$V = \dfrac{1}{3}\pi(6)^2(18)$

$V = 216\pi$

$216\pi = \dfrac{1}{3}\pi r^2(8)$

$\dfrac{216\pi}{8\pi} = \dfrac{\frac{1}{3}\pi r^2(8)}{8\pi}$
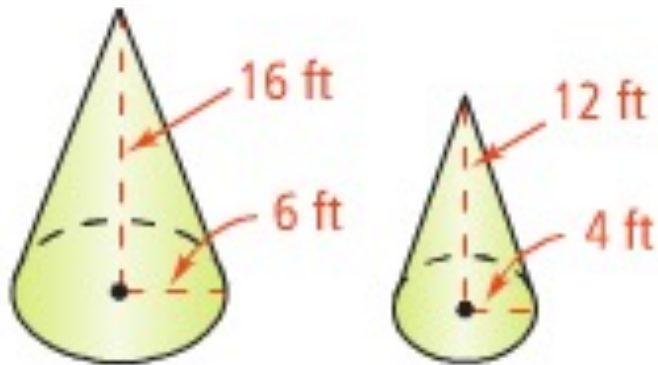
$27 = \dfrac{1}{3}r^2$

$(3)27 = \dfrac{1}{3}r^2(3)$

$81 = r^2$

$\boldsymbol{r = 9}$

U6L10 – Similar Solids

Are the two figures similar? If so, give the scale factor of the 1st figure to the 2nd figure.

$$\frac{16}{12} = \frac{4}{3} \qquad \frac{6}{4} = \frac{3}{2}$$

$$\frac{4}{3} \neq \frac{3}{2}$$

The cones are not similar, since their corresponding linear dimensions are not proportional.

U6L9 – Similar Solids

What is the scale factor of two similar prisms with surface areas 144 m^2 and 324 m^2?

$Ratio\ of\ corresponding\ areas:\ \dfrac{a^2}{b^2}$

$$\frac{a^2}{b^2} = \frac{144}{324}$$

$$\sqrt{\frac{a^2}{b^2}} = \sqrt{\frac{144}{324}}$$

$$\frac{a}{b} = \frac{12}{18} = \frac{2}{3}$$

The scale factor is 2:3

U6L10 – Similar Solids

The volumes of two similar solids are 1728 cm^3 and 4913 cm^3. The surface area of the larger solid is 1445 cm^2. What is the surface area of the smaller solid?

$$\frac{a^3}{b^3} = \frac{1728}{4913}$$

$$\sqrt[3]{\frac{a^3}{b^3}} = \sqrt[3]{\frac{1728}{4913}}$$

$$\frac{a}{b} = \frac{12}{17}$$

$$\frac{A_{small}}{A_{large}} = \frac{12^2}{17^2}$$

$$\frac{A_{small}}{1445} = \frac{12^2}{17^2}$$

$$\frac{A_{small}}{1445} = \frac{144}{289}$$

$$(1445)\frac{A_{small}}{1445} = \frac{144}{289}(1445)$$

$$\boldsymbol{A_{small} = 720}$$

Questions?

- Check the Message Board first

- Send a WebMail

- You can also make an appointment at https://elizondo.youcanbook.me

- You can also call me at (559) 549-3244. If I'm not available to answer your call, please leave a voicemail with your full name and phone number.