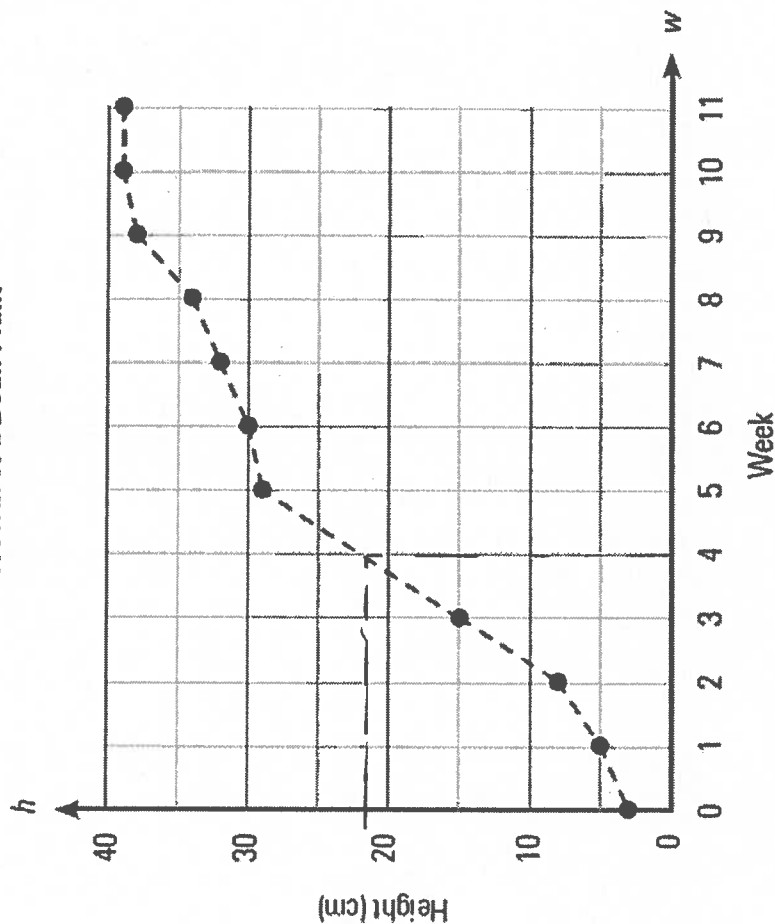


Unit 2 Review

Growth of a Bean Plant

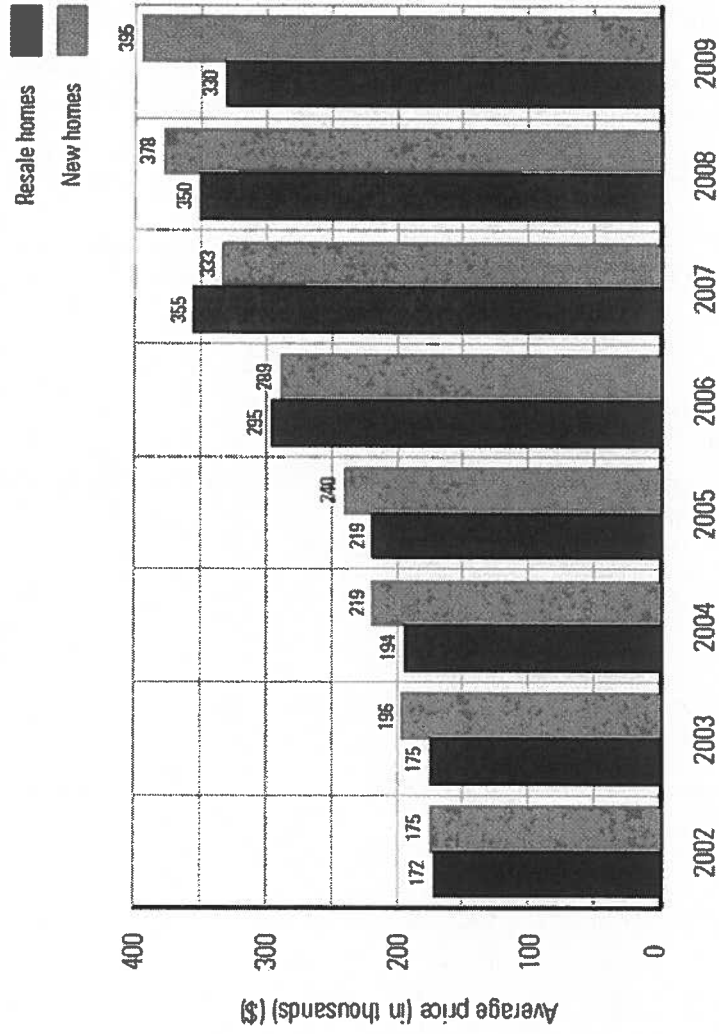


- David forgot to record the height of the bean plant in Week 4. Use the graph to interpolate the height of the plant that week.
- What might the height of the plant be in Week 12? 39 cm
- Write a statement describing trends in the bean plant's growth rate from Week 0 to Week 11.

week 0 to week 5, high growth rate
 week 5 to week 11, slower growth rate, levels out.

Roger is a real estate agent in Red Deer, Alberta. The graph below compares the average house prices of new single-family homes and resale (not new) single-family homes.

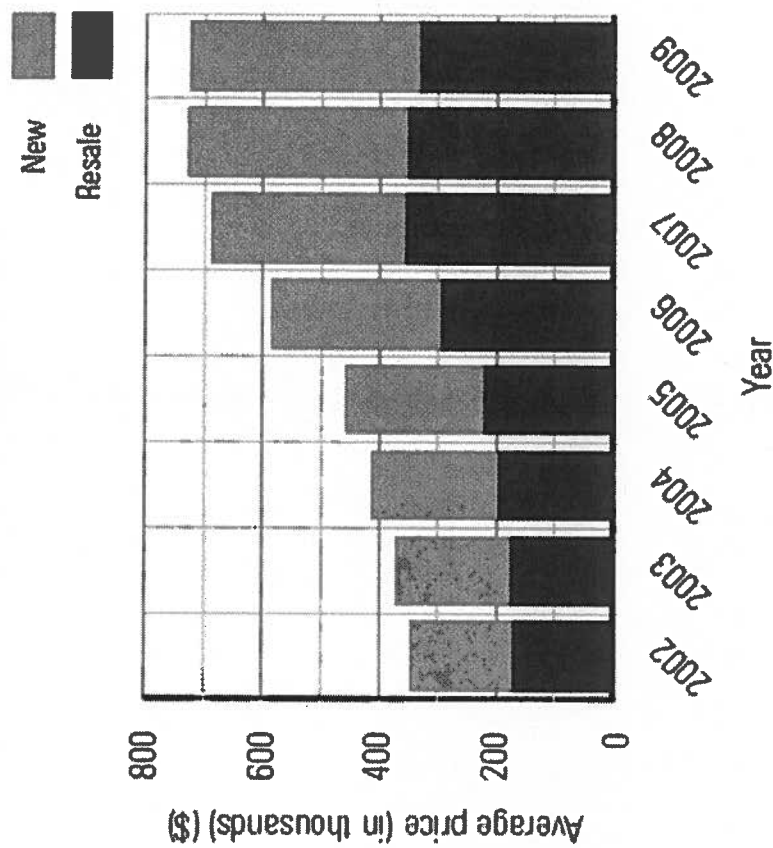
Single-family House Prices in Red Deer, Alberta, 2002-2009



- What was the average price of a new single-family home in 2005? \$240,000
- Between what years was there a drop in the price of resale single-family homes? 2007 - 2009
- What is the general trend in the differences in prices (which cost more/less) of the two types of units? In which years was this not so?

New homes more expensive
2006, 2007

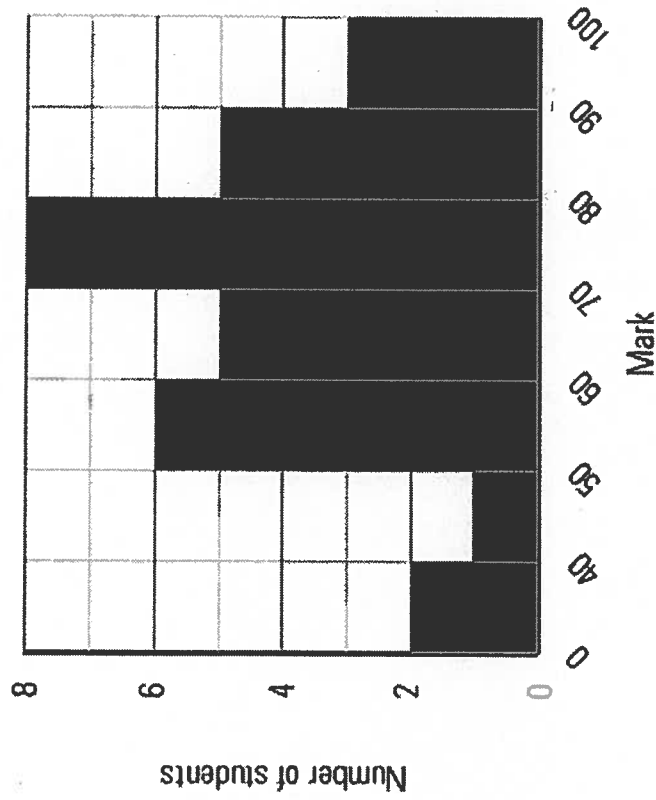
**Single-family House Prices in Red Deer,
Alberta, 2002-2009**



- b) What is less obvious on the stacked graph than on the double bar graph? difference in price
- c) When might this be useful? Graph of crimes where the different parts show (murder, theft ect.)

The following histogram represents the scores of a math class on a recent test.

Student Marks on Math Test



a) How many students received a mark between 70% and 80%? 8

b) How many students got below 60%? 6 + 1 + 2 = 9

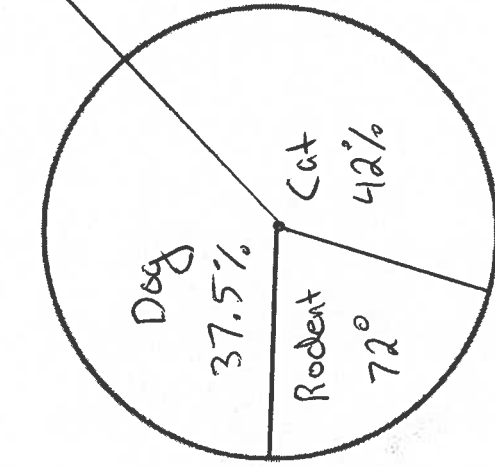
c) What was the highest mark received by a student?

90-100

4. Patty surveyed students at her school to find out what kind of pets they have. The following table shows the survey results.

SURVEY RESULTS: TYPE OF PET			
Pet	Dog	Cat	Rodent (gerbil/rat/mouse)
Number of students	39	44	21

- a) Draw a circle graph to represent the data.



$$\text{total} = 39 + 44 + 21 = 104$$

Dog

$$\frac{39}{\text{total}} = \frac{39}{104} = 0.375$$

$$0.375 \times 360 = 135^\circ$$

$$0.375 \times 100 = 37.5\%$$

Cat

$$\frac{44}{104} = 0.42$$

$$0.42 \times 360 = 151^\circ$$

Rodent

$$\frac{21}{104} = 0.2$$

$$0.2 \times 360 = 72^\circ$$

Study Guide

• Analyze: Look at Unit 2 Chapter Test.

- Bar Graph
- Line Graph
- Histogram
- Circle Graph

• Extrapolate

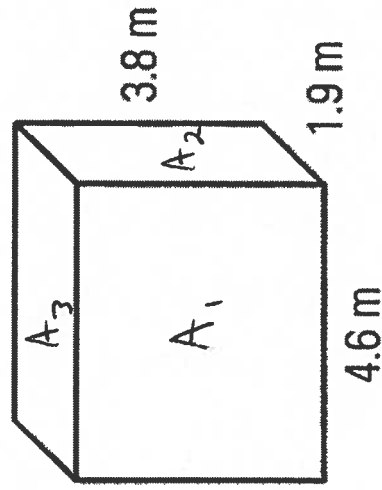
• Interpolate

Unit 3

Surface Area, Volume and Capacity

Example 5 ↙ square

Find the surface area of the right rectangular prism given below.

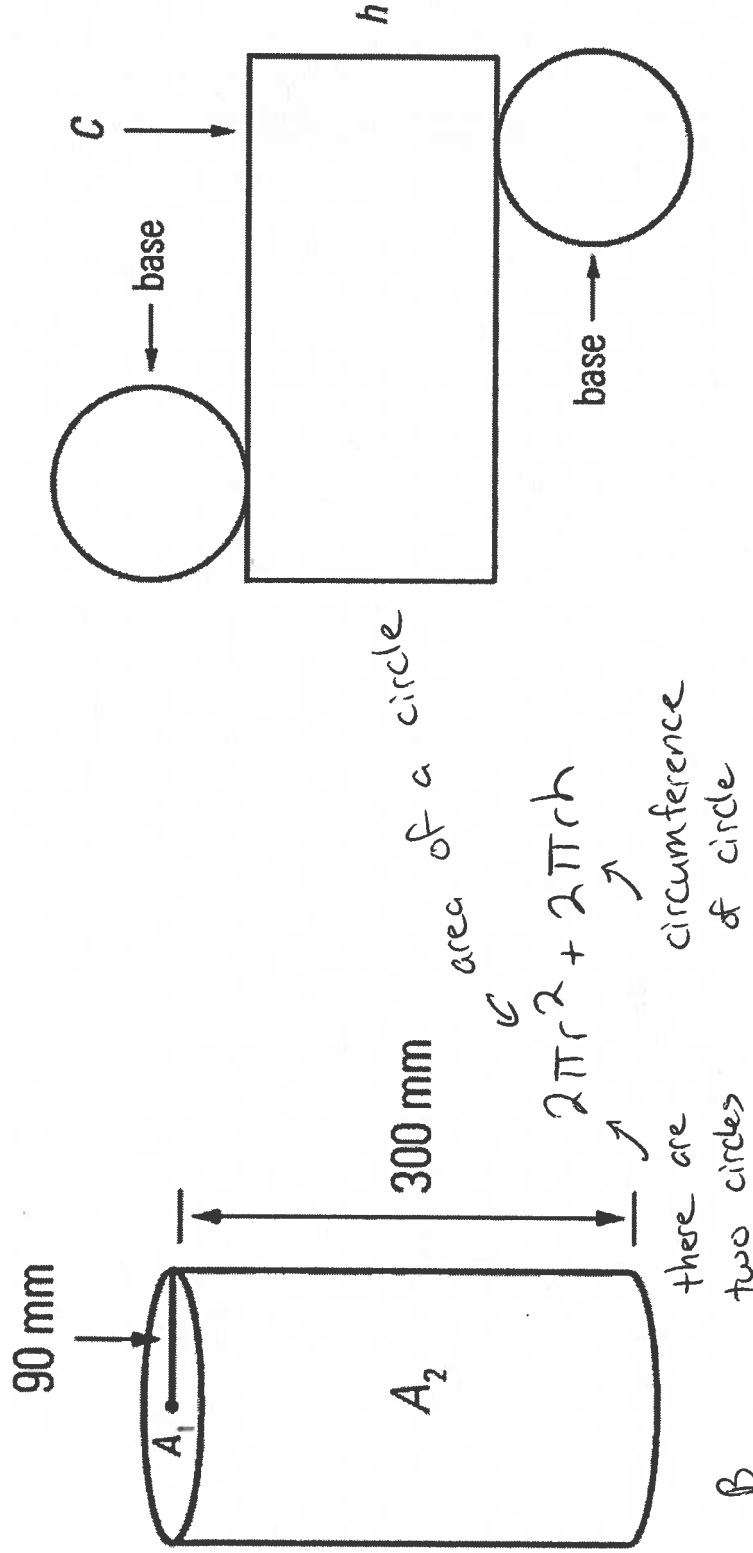


$$\begin{aligned} A_1 &= lw \\ &= 4.6 \times 3.8 \\ &= 17.48 \\ 2(A_1) &+ 2(A_2) + 2(A_3) \\ &= 2(17.48) + 2(7.22) + 2(8.74) \\ &= 34.8 + 14.44 + 17.48 \\ &= 66.72 \text{ m}^2 \end{aligned}$$

$$\begin{aligned} A_2 &= lw \\ &= 1.9 \times 3.8 \\ &= 7.22 \end{aligned}$$

$$\begin{aligned} A_3 &= lw \\ &= 4.6 \times 1.9 \\ &= 8.74 \end{aligned}$$

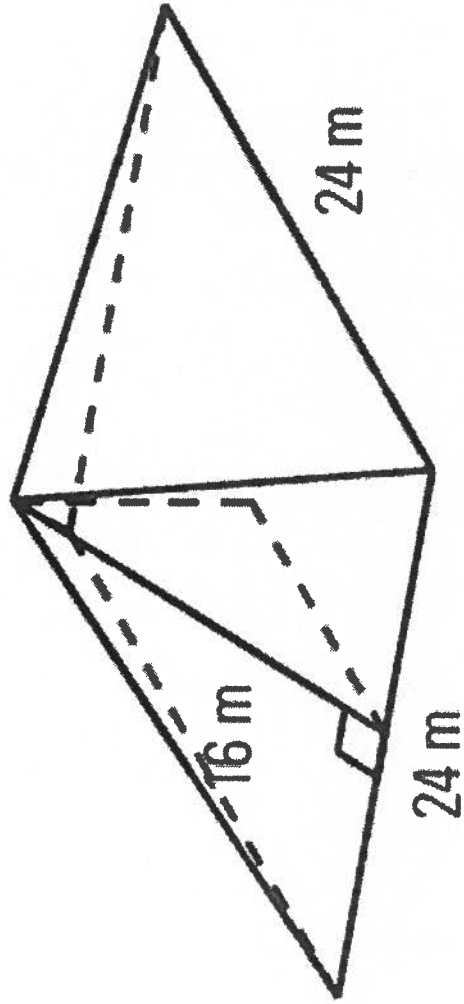
Find the surface area of a cylinder that has a radius of 90 mm and a height of 300 mm.



$$\begin{aligned}
 & 2\pi(90)^2 + 2\pi(90)(300) \\
 &= 2\pi(8100) + 2\pi(90)(300) \\
 &= 25\,447 + 169\,646 = 195\,093 \text{ mm}^2
 \end{aligned}$$

B E D M A S

Find the surface area of the square-based pyramid below.



Area of triangle

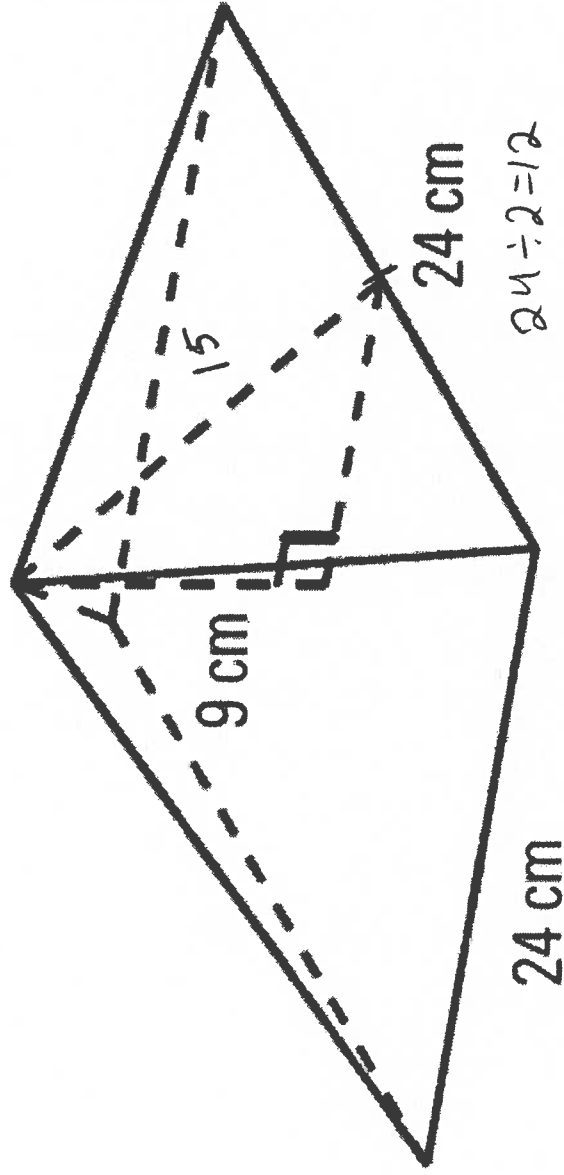
$$\begin{aligned} & \frac{1}{2}bh \\ &= \frac{1}{2}(24)(16) \\ &= 192 \text{ m}^2 \end{aligned}$$

Base (square)

$$\begin{aligned} A &= lw \\ &= 24 \times 24 \\ &= 576 \text{ m}^2 \end{aligned}$$

$$\begin{aligned} & 4(192) + 576 \\ &= 768 + 576 \\ &= 1344 \text{ m}^2 \end{aligned}$$

Find the surface area of the square-based pyramid.



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

$$9^2 + 12^2 = c^2$$

$$81 + 144 = c^2$$

$$\frac{225}{\sqrt{}} = c^2$$

$$15 = c$$

Triangle

$$A = \frac{1}{2}bh$$

$$= \frac{1}{2}(24)(15)$$

$$= 180 \text{ cm}^2$$

Base

lw

$$= 24 \times 24$$

$$= 576 \text{ cm}^2$$

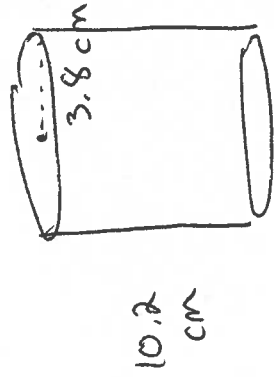
$$4(180) + 576$$

$$= 720 + 576$$

$$= 1296 \text{ cm}^2$$

A can of tomato sauce has a radius of 3.8 cm and a height of 10.2 cm.

- a) What is the volume of the can?
- b) How much tomato sauce (in litres) does the can hold?



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

↗
base

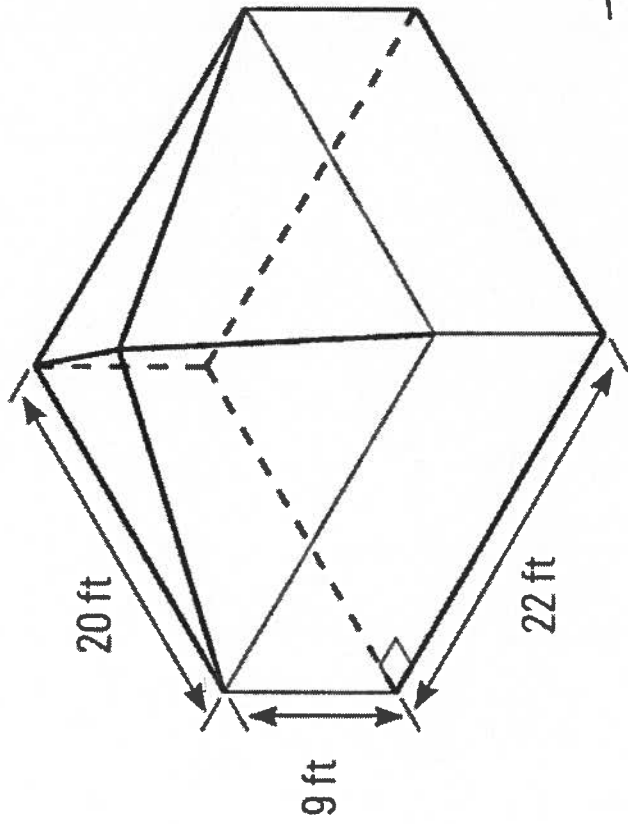
$$V = \pi (3.8)^2 \times 10.2$$

$$V = \pi (14.44) \times 10.2$$

$$V = 462.7 \text{ cm}^3$$

b) $462.7 \text{ cm}^3 \div 1000 = 0.46 \text{ L}$

What are the volume and capacity of the following figure? The height to the peak is 15 ft.



Rectangular Prism

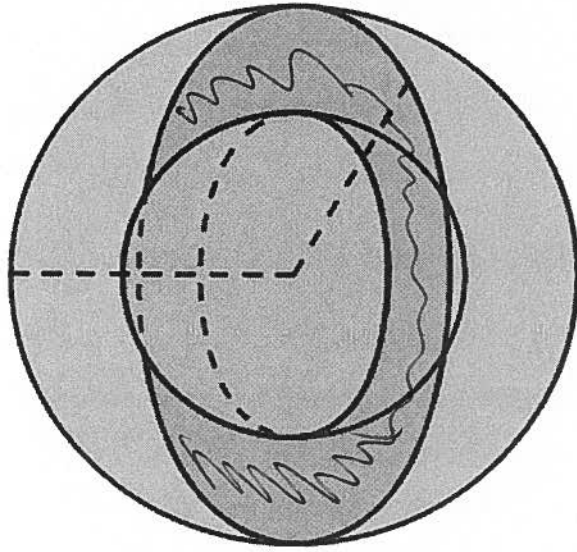
$$\begin{aligned} V &= l \times w \times h \\ &= 22 \times 20 \times 9 \\ &= 3960 \text{ cubic ft} \end{aligned}$$

Pyramid

$$\begin{aligned} &= \frac{1}{3} \times 20 \times 20 \times 15 \\ &= \frac{1}{3} (20 \times 20 \times 15) \\ &= 2000 \text{ cubic ft} \end{aligned}$$

$$3960 + 2000 = 6160 \text{ cubic ft}$$

2. A sphere with a radius of 46 cm is centred inside a sphere with a radius of 76 cm.



Inside sphere

$$V = \frac{4}{3} \pi r^3$$

$$= \frac{4}{3} \pi (46)^3$$

$$= \frac{4}{3} \pi (97336)$$

$$= 407\,720.1 \text{ cm}^3$$

Outside sphere

$$V = \frac{4}{3} \pi r^3$$

$$= \frac{4}{3} \pi (76)^3$$

$$= 1\,838\,778.4 \text{ cm}^3$$

$$1\,838\,778.4 - 407\,720.1 =$$

$$1\,431\,058.3 \text{ cm}^3$$

- a) What is the volume of the space between the two spheres?

- b) What is the capacity?

$$1\,431\,058.3 \text{ cm}^3 \div 1000$$

$$= \cancel{1431} \text{ L}$$

Study Guide

- Creating nets
- Identify oblique and right prisms
- Calculate surface area and volume of:
 - Rectangular prism
 - Cylinder
 - Pyramid
 - Cone
 - Sphere
- Composite objects



Chapter test,