Math 10-C Shape & Space Assignment List **Name: _____**

C1: Measurements

- Human Ruler / Estimating Competition
- Text pg. 13: 10

C2: Conversions

- C2 Conversions Quick Check
- Text pg. 3: 3,4
- Text pg. 6: 2,7
- Text pg. 11: 4-6,11,12

C3: Surface Area

- Derive Surface Area Formulas Chart
- C3 Surface Area Asgn
- Text pg. 25: 1abe,2ac,4,5ad
- Text pg. 25: 1cd,2bd,5bc,6,9,10

C4: Volume

- C4 Volume Asgn
- Text pg. 29: 1ab,3ad
- Text pg. 29: 2ab,3c
- Text pg. 29: 1c, 3b
- Text pg. 29: 5,9-11,18

Review

- Text pg. 13: 4-7, 11-13
- Text pg. 32: 5bcd, 6ac, 11, 12abc

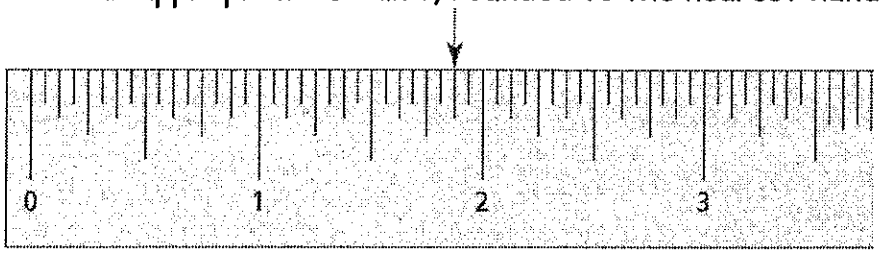
Math 10-C Shape & Space Quick Check **Name:**_____

C2 - Conversions

1. Fill in the blanks.

   a. 0.15 km = _____ m b. 650 cm = _____ m

2. What reading is shown on the Imperial ruler below? Convert this measurement to an appropriate SI unit, rounded to the nearest hundredth.



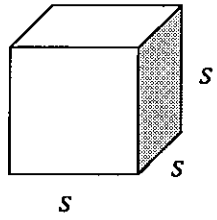
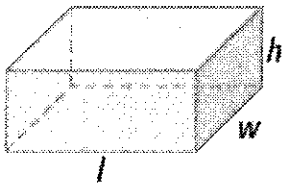
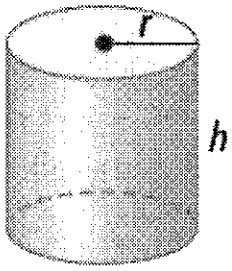
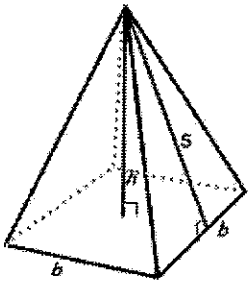
3. The height of a standard basketball net is 10 feet. What is the height of a basketball net in metres, rounded to the nearest hundredth of a metre? Show proper calculations with units included.

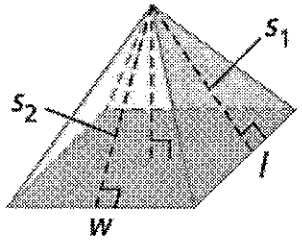
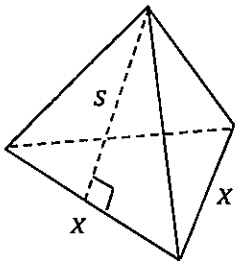
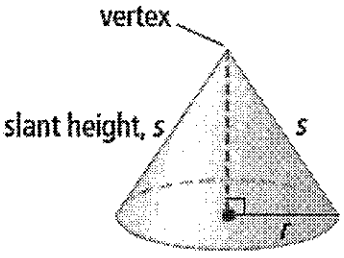
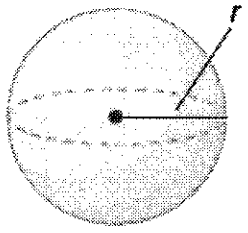
4. A car is travelling 80 mph. What is the speed of the car in kilometres per hour, rounded to the nearest whole number? Show proper calculations with units included.

5. What is your height in feet and inches? Determine how tall you are in centimetres.

Derive Surface Area Formulas Chart Name: _____

Complete the following table. Develop a simplified formula for the surface area of each object using the labeled dimensions.

Object	Net	Simplified Surface Area Formula
 Cube		
 Rectangular Prism		
 Cylinder		
 Square Based Pyramid		

 Rectangular Based Pyramid		
 Regular Tetrahedron *(All faces congruent triangles)*		
 Cone		
 Sphere		

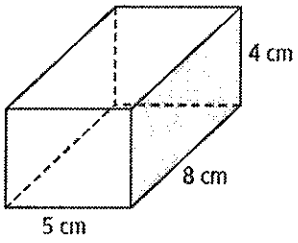
Math 10-C Shape & Space Asgn **Name:** _____

C3 Surface Area

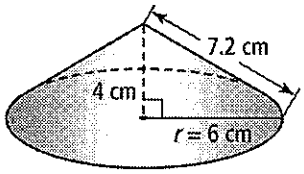
You must show ALL work to receive full marks. Please box final solutions.

1. Determine the surface area of each of the shapes below.

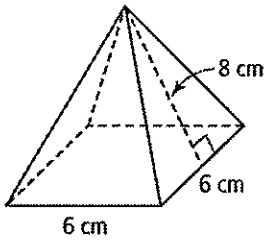
(a)



(b)

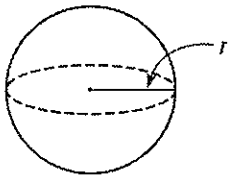


2. Sketch the net for the shape below and then calculate the surface area.

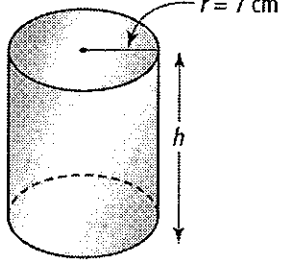


3. The surface area is given for each 3-D object. To the nearest whole unit, determine the missing dimension.

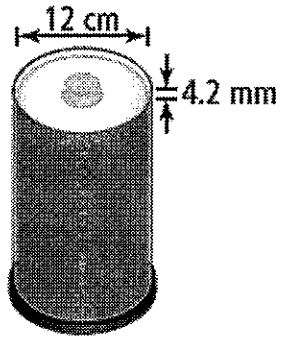
(a) $SA = 5025 \text{ mm}^2$



(b) $SA = 1319 \text{ cm}^2$



4. **Unit Project** Compact discs are sometimes packaged in cylindrical stacks of 100. Each CD has a thickness of 1.2 mm and a diameter of 12 cm.

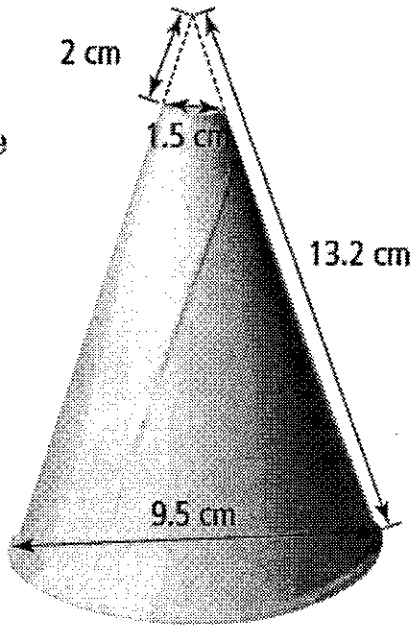


a) The outside radius of the storage case is 0.7 cm more than that of the CD. The height of the case is 4.2 mm more than that of the stack of 100 CDs. What is the surface area of the storage case, excluding the base, to the nearest square centimetre?

b) If a rectangular CD jewel case holding a single CD is 0.5 cm wider than the CD, 2.5 cm longer than the CD, and 8 times the thickness of the CD, what is the surface area of the jewel case?

5. Earth has a diameter of approximately 8000 mi. Land forms about 29% of the surface area of Earth. Assume Earth is a sphere. Estimate the area of land on Earth.

6. Gas stations often have a supply of small paper funnels that customers can use to add oil to their vehicle engines without spilling. Each funnel is a right cone with a small hole cut out of the top. The funnel has a slant height of 13.2 cm and the diameter of the large opening is 9.5 cm. The diameter of the small opening is 1.5 cm. Determine the amount of paper in the funnel.

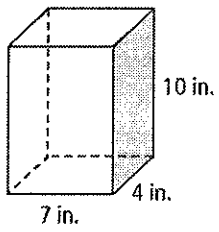


Math 10-C Shape & Space Asgn **Name:** _____
C4 Volume

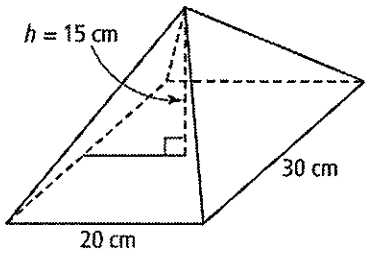
You must show ALL work to receive full marks. Please box final solutions.

1. Determine the volume of each 3-D object. Round each answer to the nearest tenth of a cubic unit, if necessary.

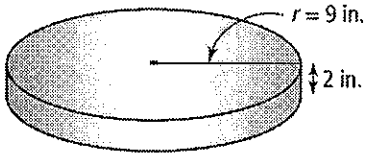
a)



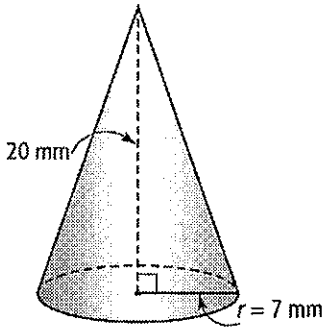
b)



c)



d)

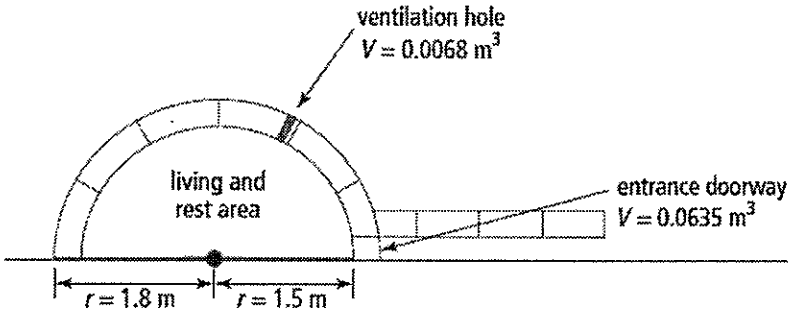


2. A spherical candy jawbreaker has a diameter of 4 inches. What is the volume of this jawbreaker, rounded to the nearest tenth of a cubic inch?

3. A different spherical candy jawbreaker has a volume of 113 in^3. What is the diameter of this jawbreaker, rounded to the nearest inch?

4. Kendra wants to purchase a bead necklace made of jade. The cost of the necklace depends upon the amount of jade in the necklace. Each bead is 7 mm in diameter and there are 100 beads in the necklace. What is the amount of jade in the necklace, in cubic centimetres?

5. Traditionally, the Inuit of northwestern Canada have built domed-shaped family homes called igloos. The volume of snow in an igloo varies depending on the size. Every igloo has a ventilation opening as well as an entrance.



Calculate the volume of snow used to construct the main portion of igloo in the picture, not including the entrance tunnel. Express your answer to the nearest tenth of a cubic metre.

Did You Know?

The word *igloo*, meaning a house of snow. The igloo shape is semi-spherical because it creates the greatest amount of living space with the least amount of snow.

6. The roof of a house is shaped like a right pyramid with a square base. The base of the pyramid measures 32 ft on each side, and the roof must enclose a volume of at least 4096 ft^3 of air. Calculate the minimum height for the apex of the roof.

7. An MP3 player with a memory of 80 GB has a storage capacity of 20 000 average-length songs. A vinyl LP record is 0.11 in. thick and on average can hold 12 songs. If the dimensions of the MP3 player are 4.14 cm wide, 9.15 cm high, and 0.85 cm thick, and the record has a radius 6 in., how many songs per cubic centimetre are there on each storage medium? Express your answers to the nearest hundredth.