1. Define *surface area:*

   _____
   _____

2. Define *lateral area:*

   _____
   _____

3. Define *volume:*

   _____
   _____

Classify the following as polyhedra or not. Circle yes or no.
If you circle no, then explain why that figure is not a polyhedron.

   4a. Prism
   4b. Cone

4a. Yes or No
_____
_____
4b. Yes or No
_____
_____

5. What are Platonic Solids? _____

   Why are they called that? _____

List them.

6. _____

7. _____

8. _____

Bonus if you can get them all! _____ _____

9. State Euler's Theorem and give an example of finding
   one of the missing pieces if given a pentagonal prism.

10-12. Give a common household example of at least 3 of the solids we have studied in this chapter. Make sure to identify which solid is being represented by the example you cite. Give the volume or surface area formula for the solid you identify. Draw the matching picture for extra credit! ☺

For instance: (You can't use this example by the way!)

A **_Kleenex box_** is an example of a common household object representing a **_rectangular prism_**.

The volume formula for a rectangular prism is: _lwh_

10. Example #1:
Household Object: _____   Proper Geometric Name: _____
Volume or Surface Area Formula: _____
Picture:

11. Example #2:
Household Object: _____   Proper Geometric Name: _____
Volume or Surface Area Formula: _____
Picture:

12. Example #3:
Household Object: _____   Proper Geometric Name: _____
Volume or Surface Area Formula: _____
Picture:

13. Find the surface area of the triangular prism. Surface area = _____

19.1 cm
14 cm
34 cm
13 cm
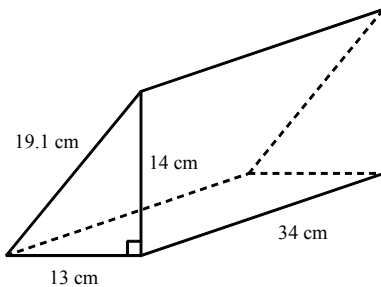
14. Find the surface area and volume of the cylinder that can be folded from the net shown below. (Leave answer in terms of π.)

2 ft

2 ft

2 ft
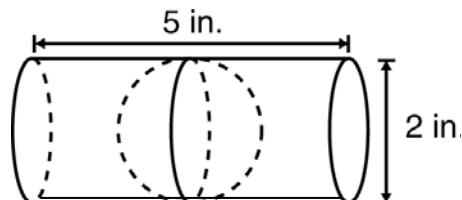
14. Surface Area =

_____

Volume =

_____
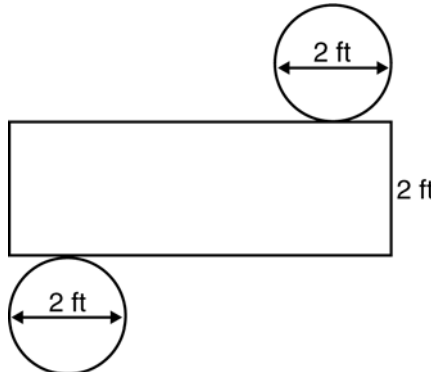
15. Find the surface area and volume of the right cone below to one decimal place.

5 cm

15 cm

15. Surface Area =

_____

Volume =

_____
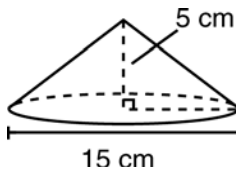
16. Find the surface area and volume on the regular pyramid below. (If necessary, round your answer to one decimal place.)

12 ft

14 ft

16. Surface Area =

_____

Volume =

_____
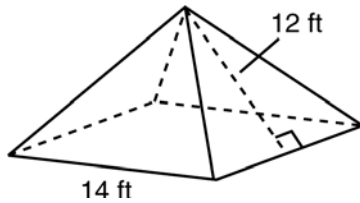
17. A sphere fits snugly inside a right cylinder as shown below. Find the volume lying outside the sphere but inside the cylinder to the nearest tenth of a cubic inch.

5 in.

2 in.

17. Volume = _____

18. Find the diameter of a sphere that has a surface area of 196π in^2.
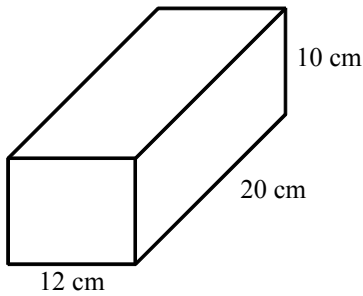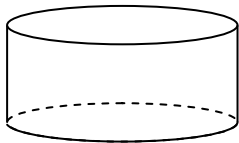
18. Diameter = _____

19. The shipping crates shown are similar.
A. Find the similarity ratio of the crate on the left to the crate on the right.
B. Find the ratio of their surface areas.
C. Find the ratio of their volumes.

19.

A. _____

B. _____

C. _____

7

7

9

6
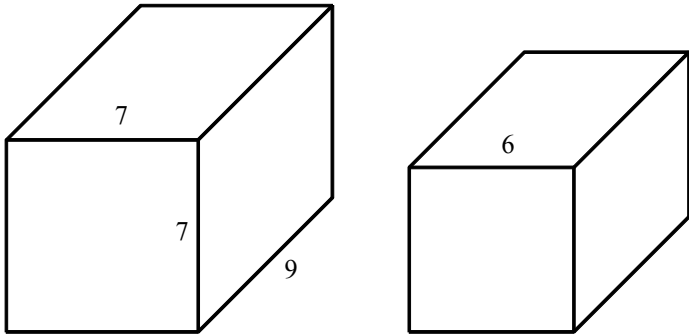
20. Ralph bought a generator that will run for 2 hours on a liter of gas. The gas tank on the generator is a rectangular prism with dimensions 12 centimeters by 10 centimeters by 20 centimeters as shown below. If Ralph fills the tank with gas, how long will the generator run? $(1L = 1000 \text{ cm}^3)$

20. _____

10 cm

20 cm

12 cm

(SE) 21. In the cylinder below, the radius is 4 centimeters and surface area is 72π square centimeters.
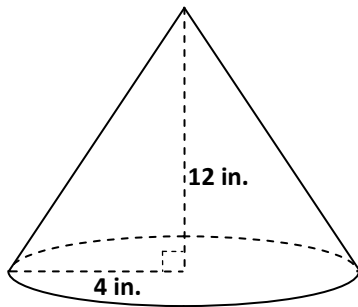
21. _____

What is the height of the cylinder?

A. 4 cm

B. 5 cm

C. 6 cm

D. 9 cm

(SE) 22. What is the volume of the cone below?

12 in.

4 in.

A. 192π in.^{3}

B. 96π in.^{3}

C. 64π in.^{3}

D. 48π in.^{3}

22. _____

(SE) 23. The diameter of a softball is approximately four inches.
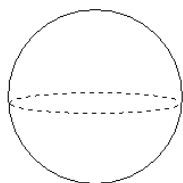
Approximately how many square inches of leather are needed to cover the ball?

A. 15 in.^{2}

B. 50 in.^{2}

C. 85 in.^{2}

D. 250 in.^{2}

23. _____

(PE) 24. A swimming pool is in the shape of a cylinder. The Pool has a depth of 5 feet and a diameter of 12 feet. What is the volume of the pool? (Leave your answer in terms of π .)
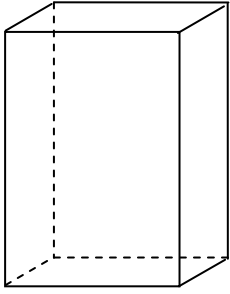
A. 60π ft^3

B. 180π ft^3
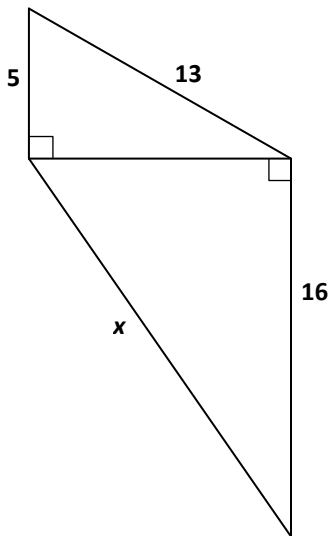
C. 300π ft^3

D. 720π ft^3

24. _____

(PE) 25. A cereal box is 10 inches by 2 inches by 15 inches.
After breakfast, the box is half full.

How many cubic inches of cereal are left inside?

A. 150 in.^{3}

B. 300 in.^{3}

C. 600 in.^{3}

D. 750 in.^{3}

(LTMR) 26. Use the dimensions given in the diagram below.

5   13

16

x

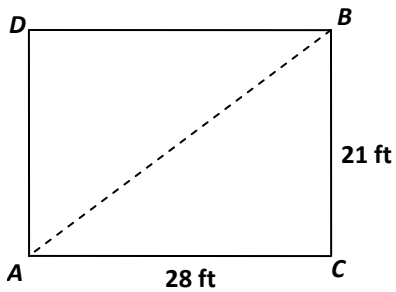What is the value of x?

A. 12

B. 20

C. 22

D. 30

(LTMR) 27. The following figures are similar.
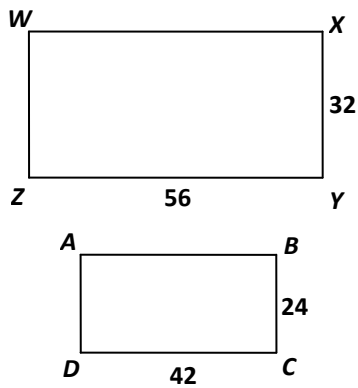
What is the scale factor of *WXYZ* to *ABCD*?

A. 1 to 2

B. 3 to 1

C. 3 to 2

D. 4 to 3

27. _____

(LTMR) 28. Nan stands at the corner of the rectangular driveway shown below.

How far must Nan walk diagonally across the driveway (*A* to *B*)?

A. 7 ft

B. 14 ft

C. 35 ft

D. 49 ft

28. _____