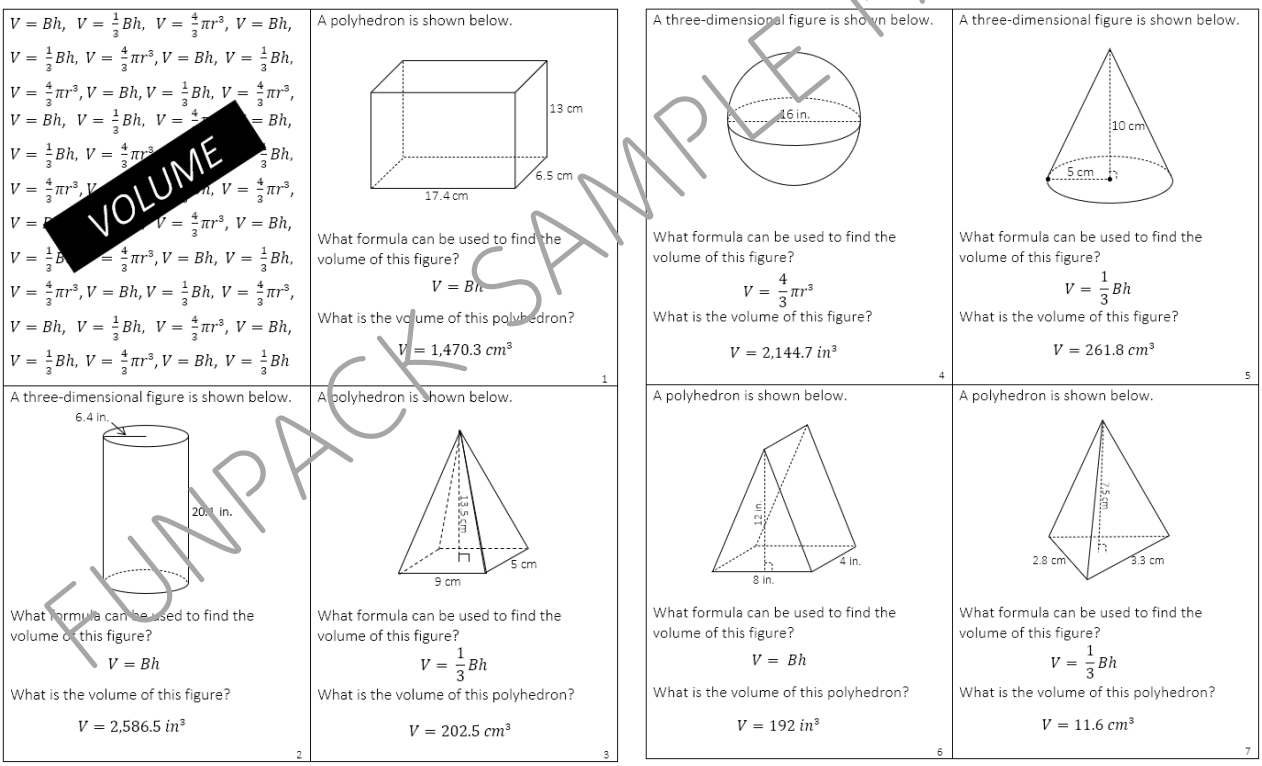
Grade 8 FUNPACK

TEKS 8.7A *solve problems involving the volume of cylinders, cones, and spheres.*

Activity Directions:

Items Needed: *Volume* book, scissors, stapler, formula chart

1. Copy the activity for each student. Allow students to use graphing technology and a formula chart for the activity.
2. Students should read and complete the volume problems. The pages can be cut apart and stapled into a booklet. The booklet may become part of a math journal or student notes. (See below.)
3. Have students practice questions coded to TEKS 8.7A.



$V = Bh,\ V = \frac{1}{3}Bh,\ V = \frac{4}{3}\pi r^3,\ V = Bh,$

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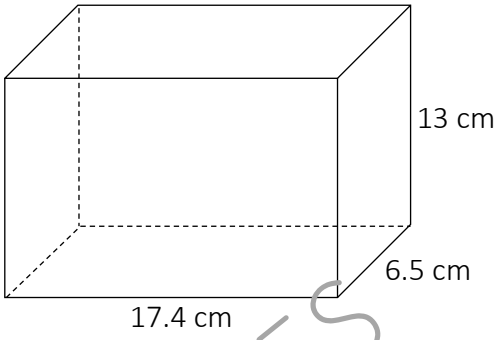
VOLUME

A polyhedron is shown below.

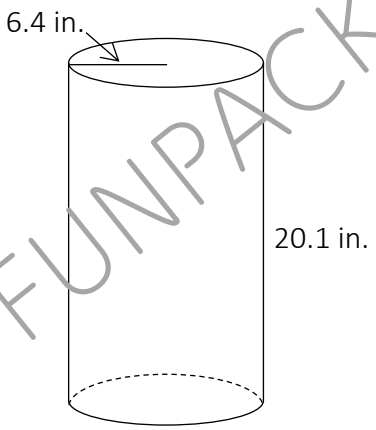


What formula can be used to find the volume of this figure?

What is the volume of this polyhedron?

1

A three-dimensional figure is shown below.

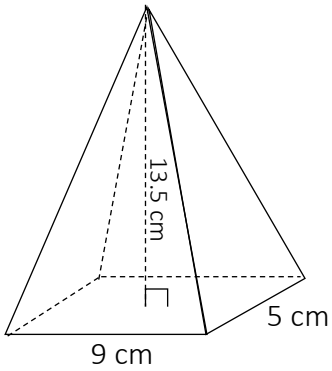


What formula can be used to find the volume of this figure?

What is the volume of this figure?

2

A polyhedron is shown below.

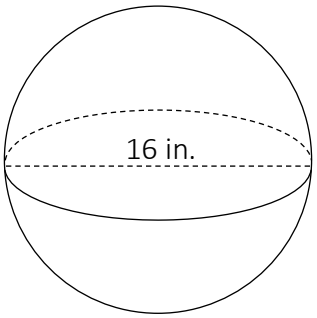


What formula can be used to find the volume of this figure?

What is the volume of this polyhedron?

3

A three-dimensional figure is shown below.

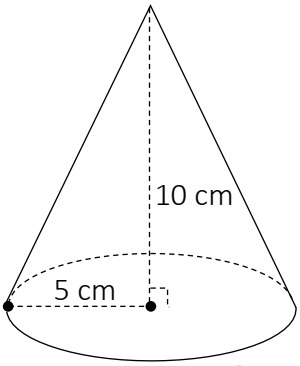


What formula can be used to find the volume of this figure?

What is the volume of this figure?

4

A three-dimensional figure is shown below.

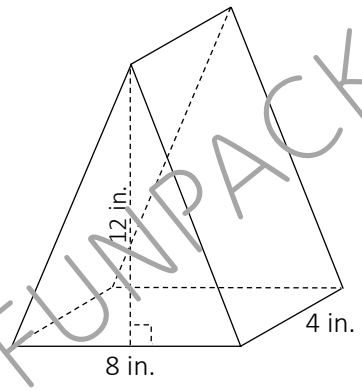


What formula can be used to find the volume of this figure?

What is the volume of this figure?

5

A polyhedron is shown below.

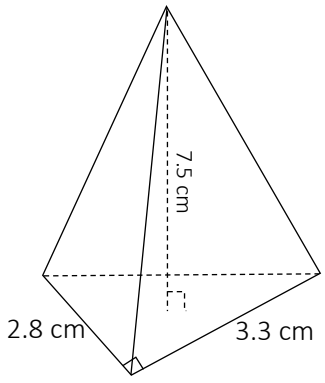


What formula can be used to find the volume of this figure?

What is the volume of this polyhedron?

6

A polyhedron is shown below.



What formula can be used to find the volume of this figure?

What is the volume of this polyhedron?

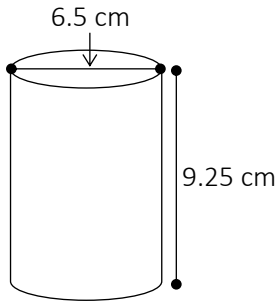
7

Name _____ Date _____

TEKS 8.7A *solve problems involving the volume of cylinders, cones, and spheres.*

TEKS 8.7A Mini-Assessment

1. Shay keeps her toothbrush in a cylindrical toothbrush holder.



What is the approximate volume of the toothbrush holder?

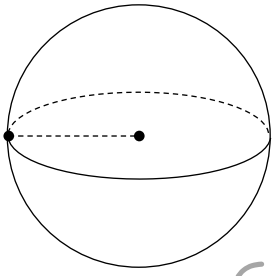
Ⓐ 189 cm³

Ⓑ 307 cm³

Ⓒ 1,228 cm³

Ⓓ 60 cm³

2. A ball shaped like a sphere has a radius of $4\frac{3}{8}$ inches.



Which of the following is the best estimate of the volume of this ball?

Ⓐ 351 in³

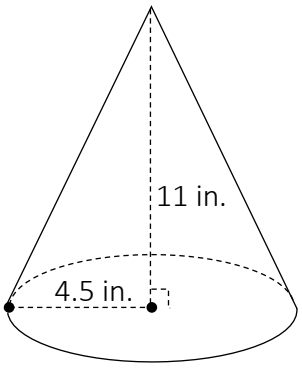
Ⓑ 88 in³

Ⓒ 2,105 in³

Ⓓ 320 in³

3. Deanne made a wooden cone with a radius of 4.5 inches and a height of 11 inches.

What is the best estimate of the volume of the cone?



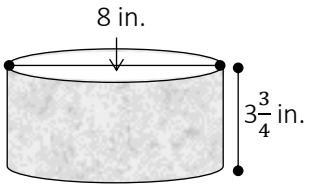
Ⓐ 700 in³

Ⓑ 932 in³

Ⓒ 64 in³

Ⓓ 233 in³

4. A cylindrical candle mold has the dimensions shown below.



If a candle maker has 500 cubic inches of wax to pour into the mold, what is the maximum number of candles he/she can produce?

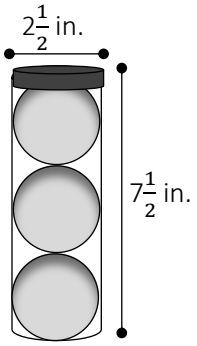
Ⓐ 1 candle

Ⓑ 2 candles

Ⓒ 3 candles

Ⓓ 4 candles

5. Tennis balls are sold in a cylindrical container with the dimensions shown below. Each tennis ball has a diameter of $2\frac{1}{2}$ inches.



What is the best estimate of the amount of air around the tennis balls in the container, measured in cubic inches?

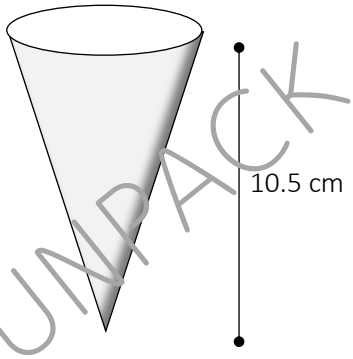
Ⓐ 24 in³

Ⓑ 36 in³

Ⓒ 12 in³

Ⓓ 6 in³

6. The diagram shows the height of a cone-shaped drinking cup. The cone has a volume of 14π cubic centimeters.



Which measurement is closest to the radius of the drinking cup in centimeters?

Ⓐ 2 cm

Ⓑ 3 cm

Ⓒ 4 cm

Ⓓ 5 cm

7. The height of a cylinder is 8 centimeters. The circumference of the base of the cylinder is 12π centimeters. Which measurement is closest to the volume of the cylinder in cubic centimeters?

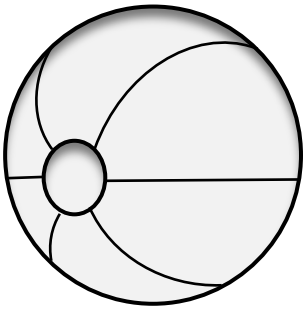
Ⓐ 38 cm³

Ⓑ 3,619 cm³

Ⓒ 905 cm³

Ⓓ 302 cm³

8. Ann bought a beach ball for a vacation trip. The diameter of the beach ball measured 23 inches.

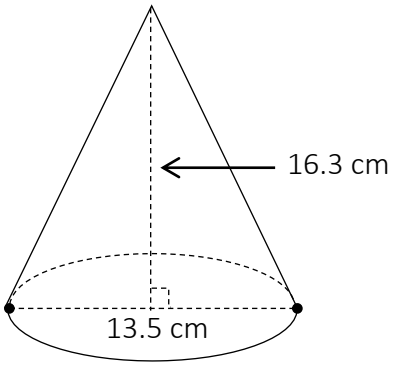


Which of the following is the best estimate of the volume of the beach ball?

Ⓐ 554 in³ Ⓒ 821 in³

Ⓑ 415 in³ Ⓓ 6,370 in³

9. The cone shown below has a diameter of 13.5 centimeters and a height of 16.3 centimeters.

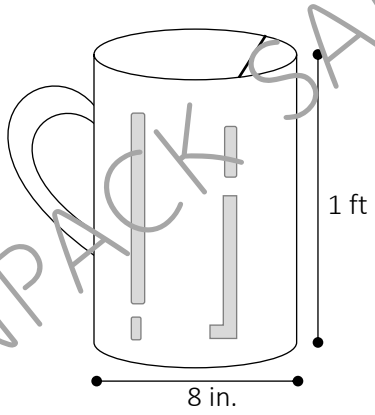


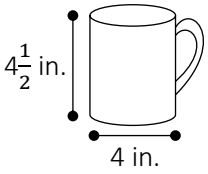
What is the best estimate of the volume of the cone?

Ⓐ 2,333 cm³ Ⓒ 691 cm³

Ⓑ 230 cm³ Ⓓ 778 cm³

10. A cylindrical pitcher is shown below. The diameter of the pitcher measures 8 inches, and the height of the pitcher measures 1 foot. Mrs. Long uses the pitcher to fill small cups in her catering business. One of the cups is shown below.





If Mrs. Long completely fills the pitcher and pours all of the liquid into cups, how many cups will she be able to completely fill? (Use 3.14 for π.)

Enter your answer in the box.