Ch 12 Pre-HS SOLs

Name: _____

____ 1. A cylindrical-shaped water tank has a diameter of 4 feet and is 12 feet tall. Which is closest to the volume of this tank?

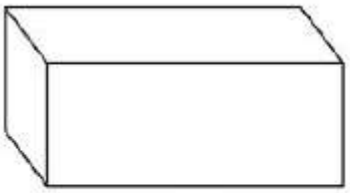
A) 48 cubic feet B) 151 cubic feet C) 452 cubic feet D) 603 cubic feet

____ 2. A cylinder-shaped barrel has a diameter of 3 feet and a height of 4.5 feet. If the barrel is empty, which is closest to the minimum amount of water needed to completely fill the barrel?

A) 32 cu ft B) 49 cu ft C) 71 cu ft D) 98 cu ft

____ 3. The length of Rectangular Prism A is shown.

The length of this prism is multiplied by a scale factor of $\frac{1}{2}$ to create Rectangular Prism B. The volume of Rectangular Prism B is --



Rectangular Prism A

A) 2 times volume of Rectangular Prism A
B) 3 times volume of Rectangular Prism A
C) $\frac{1}{4}$ the volume of Rectangular Prism A
D) $\frac{1}{2}$ the volume of Rectangular Prism A

____ 4. The cylindrical cannister of this fire extinguisher has a radius of 2.5 inches and is 13.5 inches high.

Which is *closest* to the number of cubic inches it will hold when filled?

A) 1,060 B) 265 C) 212 D) 115

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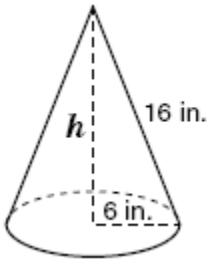
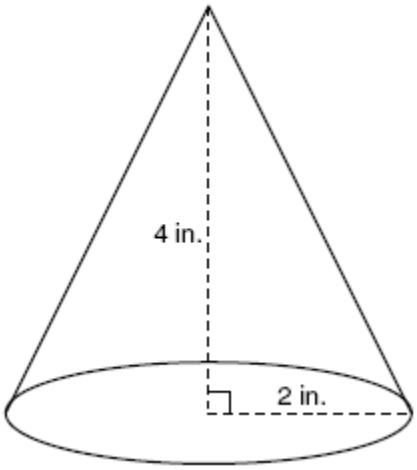
____ 5. Which is closest to the height of a cone that has a slant height of 16 inches and a radius of 6 inches?



A) 10 in. B) 14.8 in. C) 20 in. D) 17.1 in.

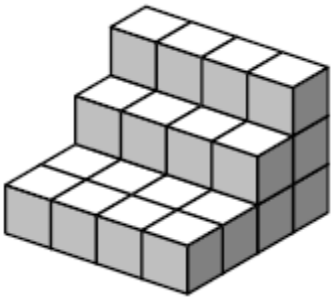
____ 6. Which is closest to the volume of the cone shown below?



A) 16.75 cu in. B) 20.94 cu in. C) 43.98 cu in. D) 67.02 cu in.

____ 7. This solid is composed of cubes, all of which are the same size.

Using an edge of a cube as one unit, which could be the volume of the figure?



A) 28 cubic units B) 24 cubic units C) 20 cubic units D) 16 cubic units

____ 8. A powdered drink mix is stored in a cylindrical container that has a radius of 6 centimeters and a height of 14 centimeters. Which is closest to the maximum number of cubic centimeters the container will hold?

A) 126 cm^3 B) 396 cm^3 C) 504 cm^3 D) 1,583 cm^3

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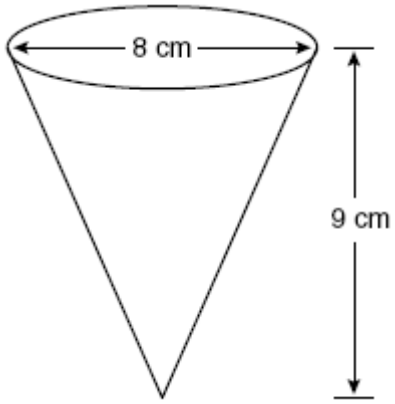
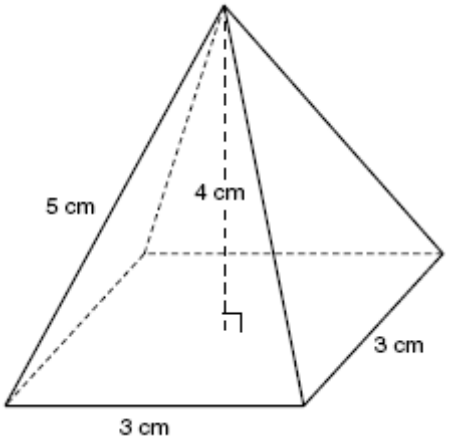
____ 9. Which is closest to the volume of this circular cone?



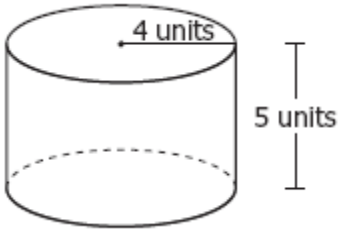
A) 150.8 cm^3 B) 452.4 cm^3 C) 603.2 cm^3 D) 1,809.6 cm^3

____ 10. What is the volume of the square-based pyramid shown below?



A) 9 cm^3 B) 12 cm^3 C) 24 cm^3 D) 36 cm^3

____ 11. Which is closest to the volume of a cylinder with measurements as shown?



A) 63 cubic units B) 88 cubic units C) 226 cubic units D) 251 cubic units

____ 12. A rectangular prism has a height of 3 inches and a volume of 27 cubic inches. The height of this prism is changed to 6 inches, and the other dimensions stay the same. What is the volume of the prism with this change?

A) 30 cubic inches B) 54 cubic inches C) 81 cubic inches D) 162 cubic inches

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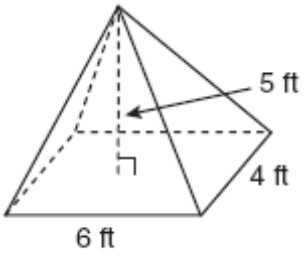
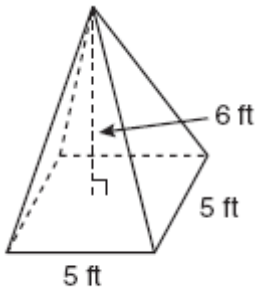
____ 13. Which statement about the volumes of the two pyramids shown below is true?



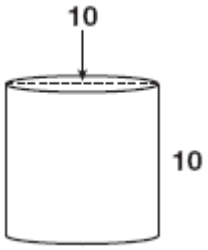
Pyramid I

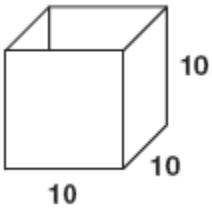


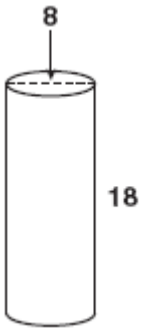
Pyramid II

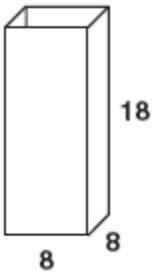
A) The volume of Pyramid II is 10 times the volume of Pyramid I.
B) The volumes of Pyramid II and Pyramid I are the same.
C) Pyramid II has 10 more cubic feet of volume than Pyramid I.
D) Pyramid II has 30 more cubic feet of volume than Pyramid I.

____ 14. If all measurements of the right prisms and cylinders are in inches, which container has the greatest volume?

A)


C)


B)


D)


____ 15. What is the volume of a square-based pyramid with base side lengths of 16 meters, a slant height of 17 meters, and a height of 15 meters?

A) 1,280 m^3 B) 1,360 m^3 C) 1,450 m^3 D) 2,040 m^3

____ 16. The radius of the base of a cone is 6 inches. The height of the cone is 6 inches. Which is closest to the volume of the cone?

A) 75 cu in B) 113 cu in C) 226 cu in D) 678 cu in

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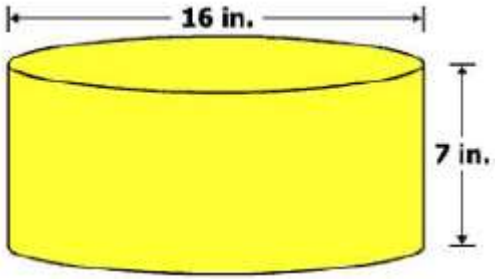
____ 17. Josh has two rectangular prisms. The length of the second prism is 10 times the length of the first prism. The heights and widths of the two prisms are the same. Which best describes the volume of the second prism.

A) The volume is 10 times the volume of the first prism.
B) The volume is 30 times the volume of the first prism.
C) The volume is 100 times the volume of the first prism.
D) The volume is 1,000 times the volume of the first prism.

____ 18. The diameter and height of a cylinderical container are shown.



The container is filled completely with cheese sauce. Which of these represents the total number of cubic inches of cheese sauce in the container?

A) $\pi \cdot 8^2 \cdot 7$ B) $\pi \cdot 16^2 \cdot 7$ C) $2\pi \cdot 8^2 + 2\pi \cdot 8 \cdot 7$ D) $2\pi \cdot 16^2 + 2\pi \cdot 16 \cdot 7$

____ 19. This table shows the dimensions of four rectangular prisms.

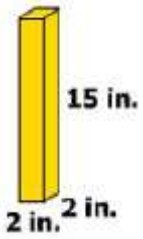
Rectangular Prism	Length (in ft)	Width (in ft)	Height (in ft)
Q	8	4	5
R	6	7	12
S	4	10	12
T	2	13	5

Which rectangular prism has the greatest volume?

A) Rectangular Prism Q
B) Rectangular Prism R
C) Rectangular Prism S
D) Rectangular Prism T

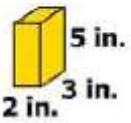
____ 20. The dimensions of 4 rectangular prisms are shown. Identify all of the prisms for which the maximum amount of sand the prism can hold is 30 cubic inches.

A)

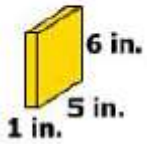


B)

C)



D)



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Student Notes Quiz

Figure	Volume Formula
Sphere	
Pyramid	
Cone	
Cylinder	
Rectangular Prism	
Triangular Prism	

Figure	Variable Definitions
Sphere	
Pyramid	
Cone	
Cylinder	
Rectangular Prism	
Triangular Prism	

Volume is a _____ relationship.

Big “B” is _____.

Slant height, radius and height in a cone have a _____ relationship.