

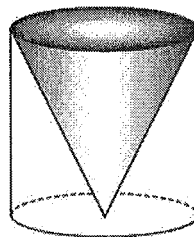
Geometry Unit 7 Exam Review

Multiple Choice

Identify the choice that best completes the statement or answers the question.

1. Two cylinders have the same size base. Cylinder 1 has a height of 3 cm, while the height of cylinder 2 is 12 cm taller. The volume of cylinder 2 is greater than the volume of cylinder 1. Which statement explains this difference in volume?
 - a. The volume of cylinder 2 is nine more than the volume of cylinder 1 because its height is nine more, and volume is the sum of the area of the base and the height.
 - b. The volume of cylinder 2 is twelve more than the volume of cylinder 1 because its height is twelve more, and volume is the sum of the area of the base and the height.
 - c. The volume of cylinder 2 is four times greater than the volume of cylinder 1 because its height is four times greater, and volume is the product of the area of the base and the height.
 - d. The volume of cylinder 2 is five times greater than the volume of cylinder 1 because its height is five times greater, and volume is the product of the area of the base and the height.

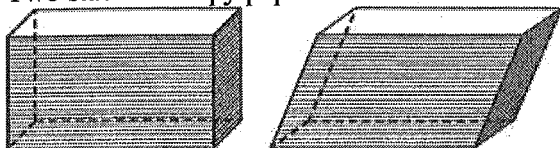
2. Loren is using a hollow cone and a hollow cylinder to determine the relationship between their volumes. The cone and the cylinder have the same radius and the same height, as shown below.



Loren fills the cylinder with liquid and then pours the liquid from the cylinder to the cone. Which statement BEST describes what she will find?

- a. The liquid from the cylinder fills the cone two times.
- b. The liquid from the cylinder fills the cone three times.
- c. The liquid from the cylinder is enough to fill the cone one time.
- d. The liquid from the cylinder is enough to fill the cone four times.

3. Two stacks of copy paper are shown below.



Stack A

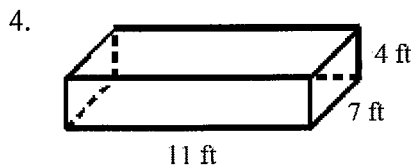
Stack B

If each stack contains 1,000 sheets of the same kind of copy paper, which statement must be true?

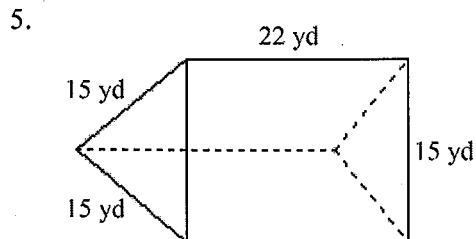
- Stack B has a larger volume than stack A because stack B has a larger slant height.
- Stack A and stack B have different lengths, widths, and heights, but they have the same volume.
- Stack A and stack B have the same volume because they have the same length, width, and height.
- Stack A has a larger volume than stack B because the paper is stacked at a right angle to the base.

Short Answer

Find the volume of the given prism. Round to the nearest tenth if necessary.

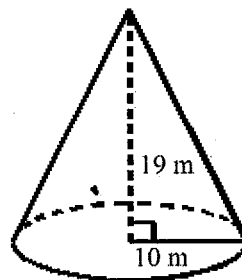


Not drawn to scale



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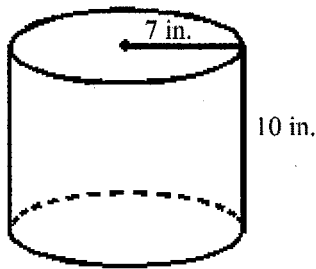
6. Find the slant height of the cone to the nearest whole number.



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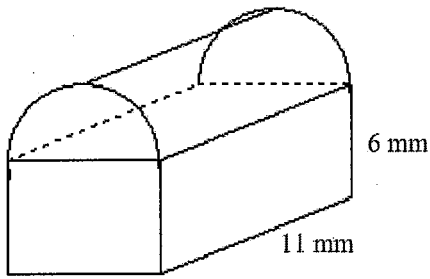
Find the volume of the cylinder in terms of π .

7.



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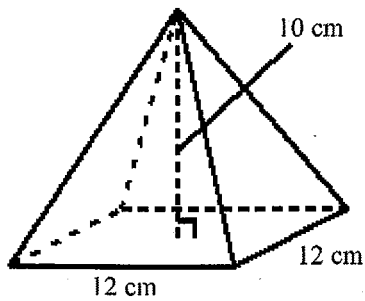
8. Find the volume of the composite space figure to the nearest whole number.



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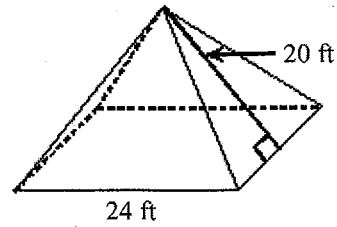
Find the volume of the square pyramid shown. Round to the nearest tenth as necessary.

9.



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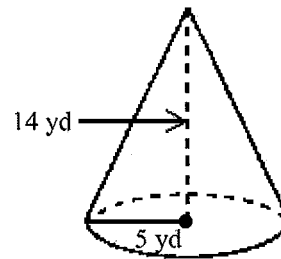
10.



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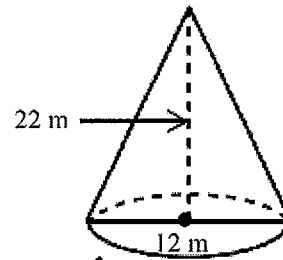
Find the volume of the cone shown as a decimal rounded to the nearest tenth.

11.



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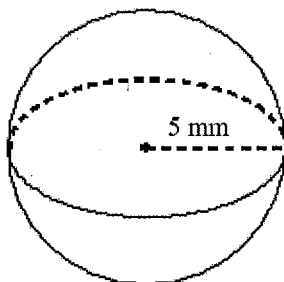
12.



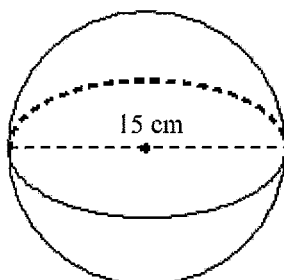
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Find the volume of the sphere shown. Give each answer rounded to the nearest cubic unit.

13.

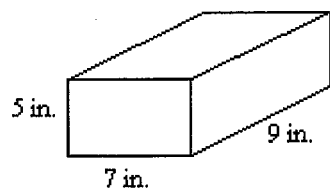


14.



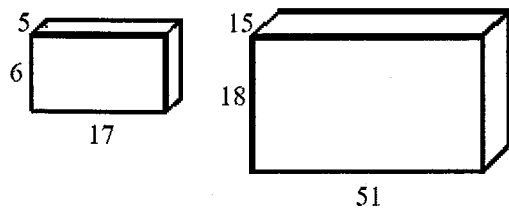
Draw a net for the figure shown. Label the net with its dimensions.

15.



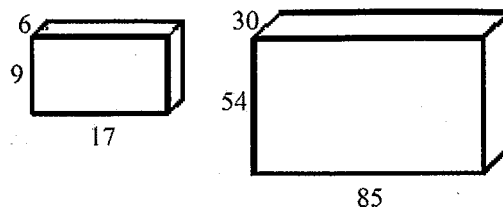
Are the two figures similar? If so, give the similarity ratio of the smaller figure to the larger figure.

16.



Not drawn to scale

17.



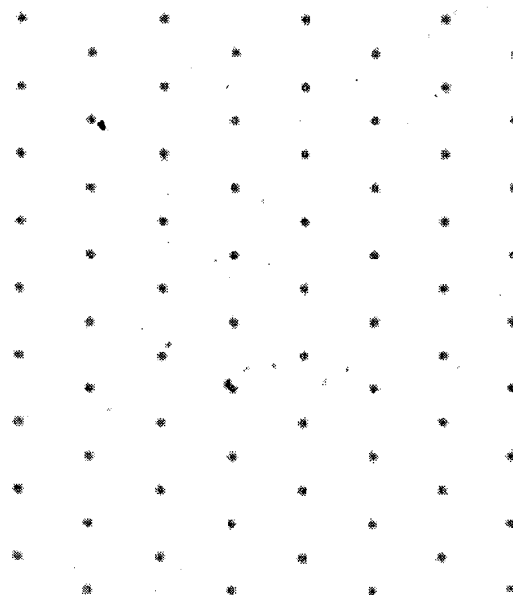
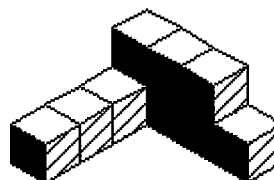
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18. Find the similarity ratio of a cube with volume 729 m^3 to a cube with volume 3375 m^3 .

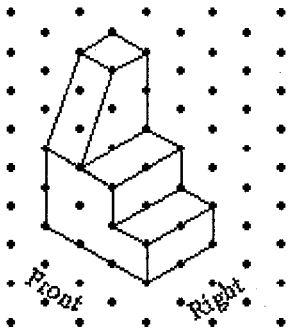
19. The surface areas of two similar solids are 311 ft^2 and 1037 ft^2 . The volume of the larger solid is 1755 ft^3 . What is the volume of the smaller solid?

20. Cylinder A has radius 1 m and height 4 m. Cylinder B has radius 2 m and height 4 m. Find the ratio of the volume of cylinder A to the volume of cylinder B.

21. Make an isometric drawing of the cube structure shown.



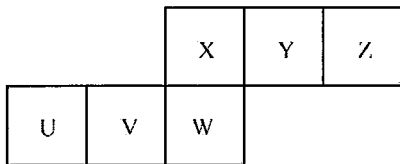
22. Make an orthographic drawing from the isometric drawing shown below.



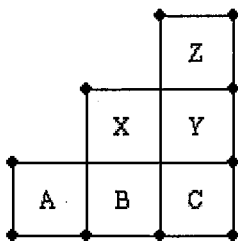
Other

Consider the pattern below. Is the pattern a net for a cube? If so, name the letters that will appear on opposite faces.

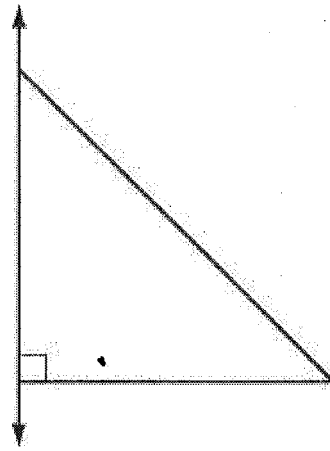
23.



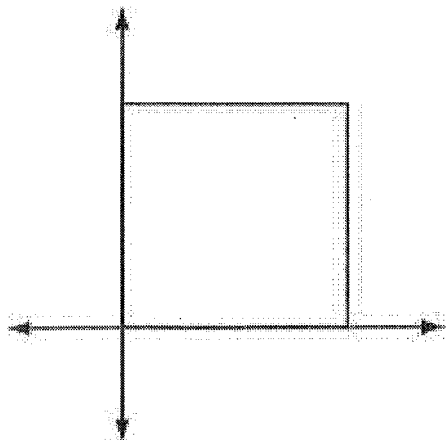
24.



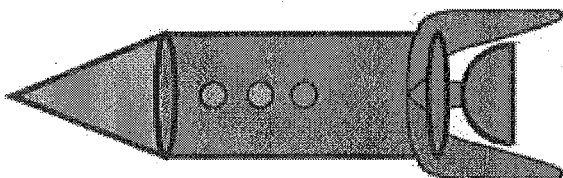
25. If the right triangle below were rotated around the vertical line, which three-dimensional shape would be formed?



26. Which solid is formed when a square is rotated around the vertical axis as shown below?

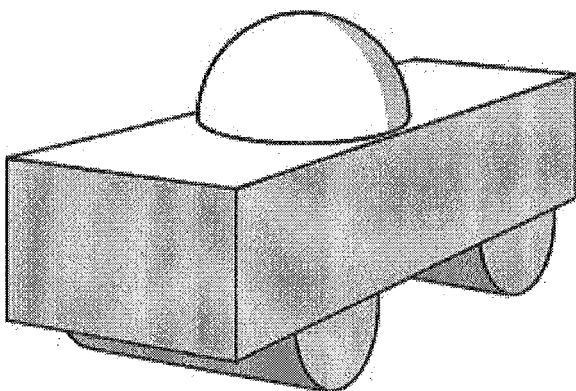


27. Roger builds a toy rocket, as shown.



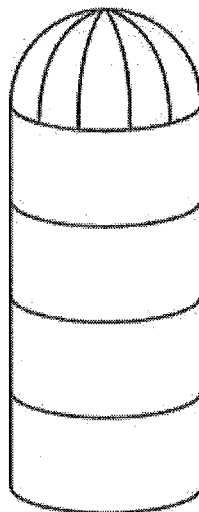
Which figures (shapes) does he use to make this rocket?

28. Look at the diagram below.

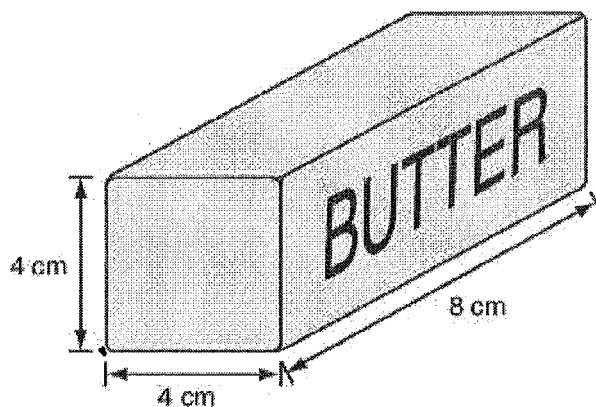


Which type of geometric solids best model this car?

29. Shown below is a silo, which can be used to store cattle feed.



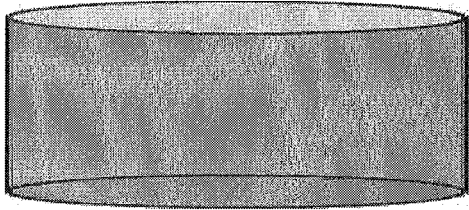
A farmer would like to estimate the volume of the silo so that he knows how much feed he can store. Which shapes could the farmer use to BEST estimate the volume of the silo?



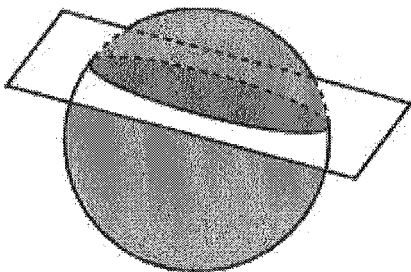
- 30.

The butter has a mass of 113 grams. Density is equal to mass divided by volume. What is the density of the butter in grams per cubic centimeter? (Round to the nearest hundredth.)

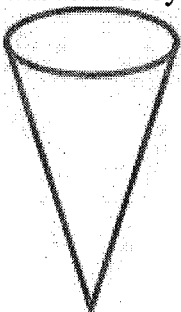
31. Harry bought a wheel of provolone cheese. It is in the shape of a cylinder as shown. Harry made a cut through the cylinder that was perpendicular to the base of the cylinder dividing the cylinder into two halves. What cross-sectional shape was produced by the cut?



32. Julia is cutting up fruit to include on a serving dish for a party. She cuts a spherical orange as shown below. What will be the shape of the cross-section of the orange?



33. An ice cream cone like the one shown was cut by making a slice perpendicular to the base and through the vertex. What cross-sectional shape was formed by the slice?



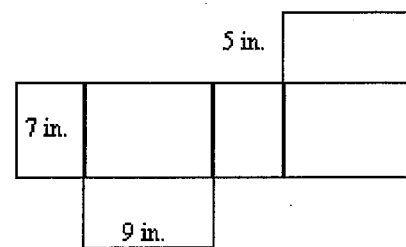
Geometry Unit 7 Exam Review Answer Section

MULTIPLE CHOICE

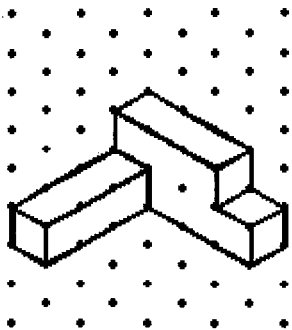
1. D
2. B
3. C

SHORT ANSWER

4. 308 ft^3
5. 2143.4 yd^3
6. 21 m
7. $490\pi \text{ in.}^3$
8. 438 mm^3
9. 480 cm^3
10. 3072 ft^3
11. 366.5 yd^3
12. 829.4 m^3
13. 524 mm^3
14. $1,767 \text{ cm}^3$
15. Answers may vary. Sample answer:



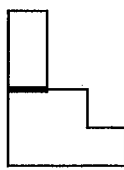
16. yes; 1:3
17. no
18. 3:5
19. 288 ft^3
20. 1:4



- 21.
- 22.



Top



Front



Right

OTHER

- 23. Yes; the pattern will form a cube. Sides U and W , V and Y , and X and Z will be opposite faces.
- 24. No; the pattern will not form a cube.
- 25. Cone
- 26. cylinder
- 27. cone, hemisphere, cylinder
- 28. rectangular prism, cylinder, hemisphere
- 29. cylinder and hemisphere
- 30. 0.88
- 31. a rectangle
- 32. circle
- 33. triangle