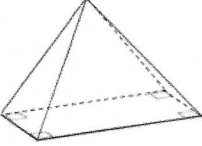
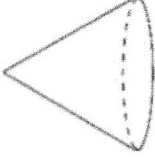
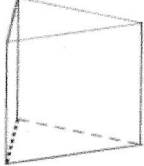
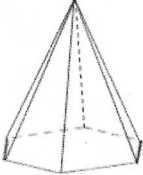

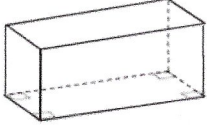
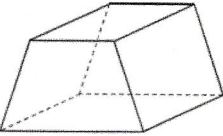
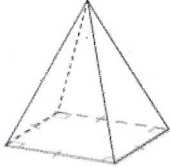
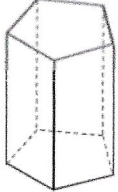
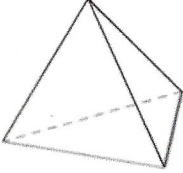
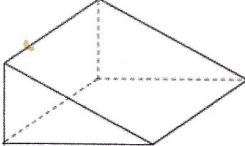
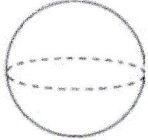


Name: \_\_\_\_\_ Date: \_\_\_\_\_ Period: \_\_\_\_\_

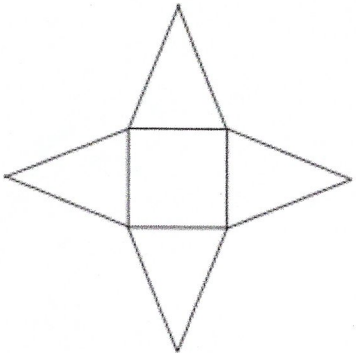
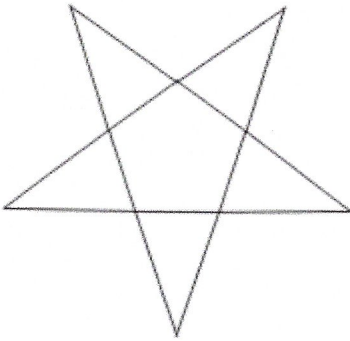
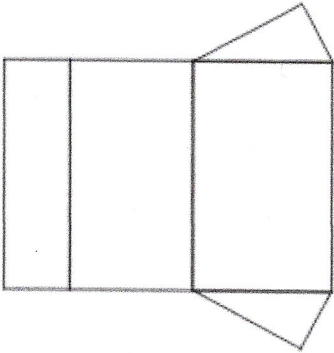
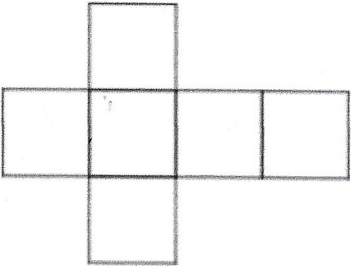
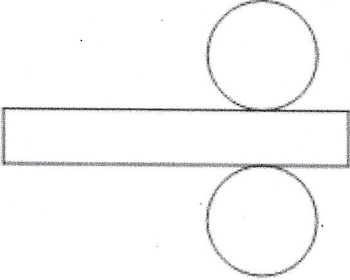
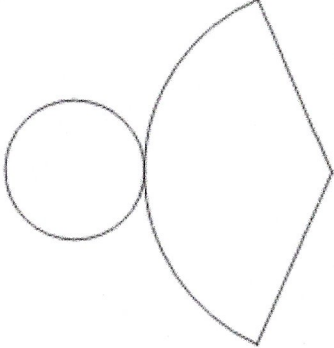
### Vocabulary – part I

<b>Directions:</b> Classify each solid. Highlight the base(s)!		
1. 	2. 	3. 
4. 	5. 	6. 
7. 	8. 	9. 
10. 	11. 	12. 

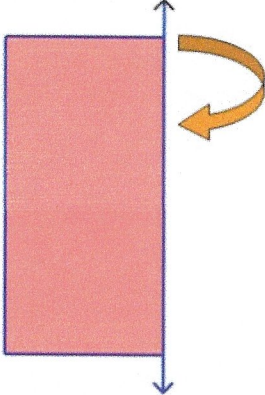
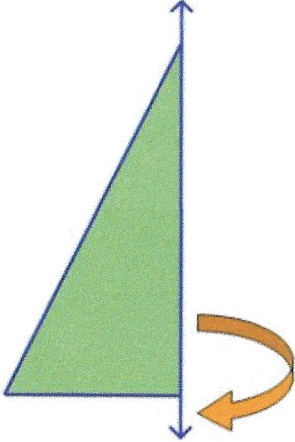
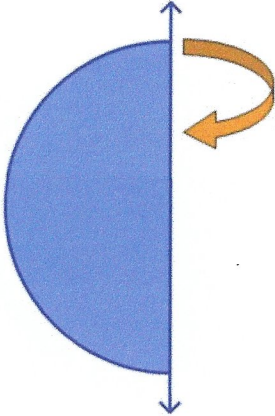
13. What is the relationship between the number of faces, vertices and edges of a polyhedron?

14. A polyhedron with 12 vertices and 30 edges has \_\_\_\_\_ faces and is called a(n) \_\_\_\_\_.

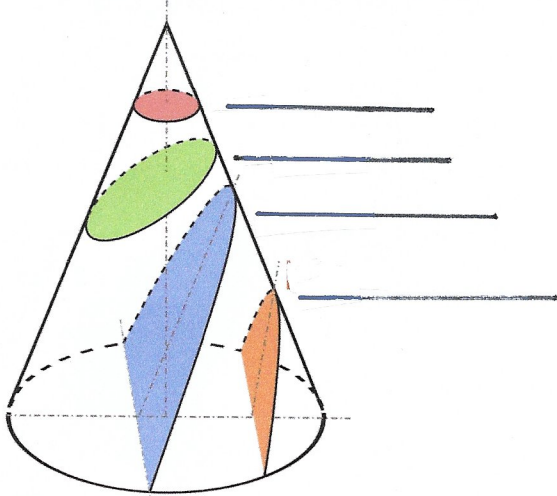
Identify each solid (most specific name) given its net.

<p>1.</p> 	<p>2.</p> 	<p>3.</p> 
<p>4.</p> 	<p>5.</p> 	<p>6.</p> 

Name the solid of revolution generated in each of the examples below.

<p>7.</p> 	<p>8.</p> 	<p>9.</p> 
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10. Name each cross section of the cone shown.



11.

Each section of a sphere is a \_\_\_\_\_.

The largest of these is called a \_\_\_\_\_

and it contains the \_\_\_\_\_ of the sphere.

This same section divides the sphere into

two \_\_\_\_\_.

Based on warmups:

12. If the dimensions of a solid are tripled, how many times larger will the new surface area be? How many larger will the new volume be?

13. If the surface area of one solid is 36 times larger than a smaller, similar solid, what is the scale factor between the two solids?

14. If the volume of a solid is 729 times larger than a smaller, similar solid, what is the scale factor between the two solids?

15. The solids shown below are similar. Answer the following:

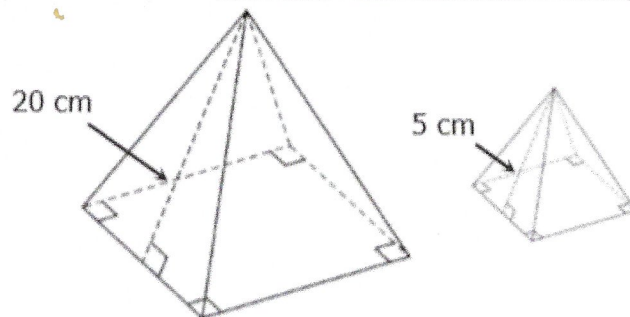
a. Find the scale factor.

b. Find the area ratio.

c. If the smaller solid has a surface area of  $96 \text{ cm}^2$ , what is the surface area of the larger pyramid.

d. Find the volume ratio.

e. If the smaller solid has a volume of  $48 \text{ cm}^3$ , what is the volume of the larger pyramid?



Name: \_\_\_\_\_ Date: \_\_\_\_\_ Per.: \_\_\_\_\_

## PART II - Volume & Surface Area Review

Find the volume and surface area of each figure below.  
Round to the nearest hundredth when necessary.

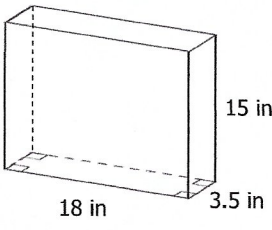
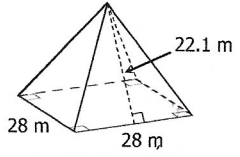
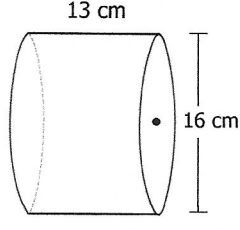
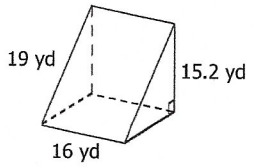
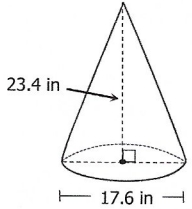
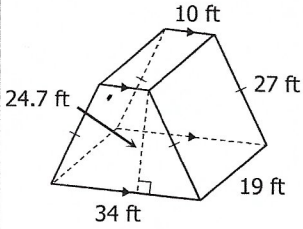
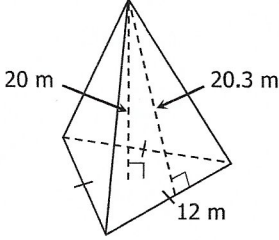
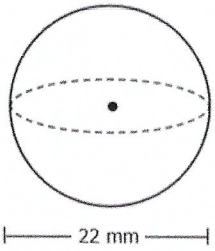
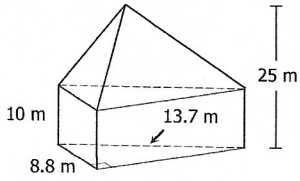
Figure	Volume	Surface Area
 <p>18 in, 3.5 in, 15 in</p>	1	2
 <p>28 m, 28 m, 22.1 m</p>	3	4
 <p>13 cm, 16 cm</p>	5	6
 <p>16 yd, 19 yd, 15.2 yd</p>	7	8

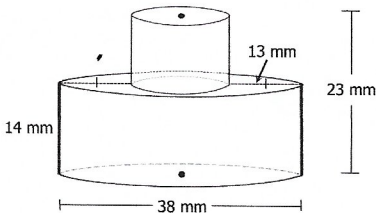
Figure	Volume	Surface Area
 <p>A right circular cone with a height of 23.4 in and a radius of 17.6 in. The height is shown as a dashed vertical line from the apex to the center of the circular base, with a right-angle symbol at the base. The radius is shown as a horizontal line from the center to the edge of the base.</p>	<p>9</p>	<p>10</p>
 <p>A rectangular pyramid with a rectangular base of 34 ft by 19 ft and a height of 24.7 ft. The height is shown as a dashed vertical line from the apex to the center of the base, with a right-angle symbol at the base. The base dimensions are labeled as 34 ft and 19 ft. One of the slant edges is labeled as 27 ft.</p>	<p>11</p>	<p>12</p>
 <p>A square pyramid with a square base of side length 12 m and a slant height of 20.3 m. The height is shown as a dashed vertical line from the apex to the center of the base, with a right-angle symbol at the base. The slant height is shown as a dashed line from the apex to the midpoint of one of the base edges, with a right-angle symbol at the midpoint. The slant height is labeled as 20.3 m. The base side length is labeled as 12 m.</p>	<p>13</p>	<p>14</p>

 <p>A sphere with a diameter of 22 mm. The diameter is shown as a horizontal line passing through the center of the sphere, with tick marks at each end. The diameter is labeled as 22 mm.</p>	<p>15</p>	<p>16</p>
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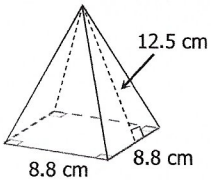
- 17 Find the total volume of the figure below.



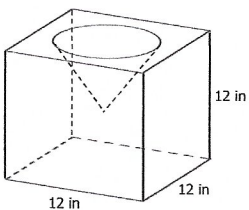
- 18 Find the total surface area of the figure below.



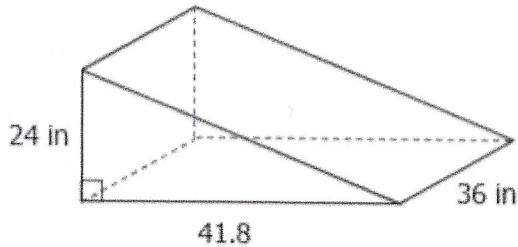
- 19 A solid silver paperweight in the form of a square pyramid is shown below. If silver costs \$0.12 per cubic centimeter, how much would it cost to manufacture six paperweights?



- 20 A cone is cut into a cube as shown below. If the cone has a diameter of 9 inches with a slant height of 7.5 inches, find the total surface area of the solid.

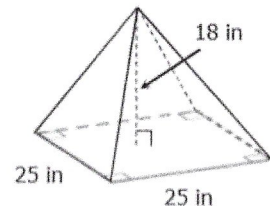


21. A diagram of Miles' skateboard is shown below with its dimensions. If Miles plans to paint the ramp, excluding the bottom, what is the area which he will paint?

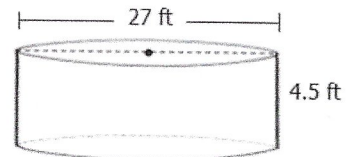


22. The diameter of a standard basketball is 9.5 inches. If the basketballs are covered in rubber, what is the minimum amount of rubber needed to manufacture a set of four basketballs?

23. Katelyn must build a sand castle in the form of a square pyramid for a project, as shown to the right. She bought 3 bags of sand, each containing  $1200 \text{ in}^3$  of sand. Will she have enough sand to build the castle?



24. A diagram of Eric's pool is shown on the right. He plans to fill his pool to a depth of 4 feet with a garden hose that has an  $80 \text{ ft}^3$  per hour flow rate. How many hours will it take to fill the pool?



25. The Luxor Hotel in Las Vegas is a square based pyramid that is 646 feet wide at the base and 350 feet tall. If the outer walls of the hotel are covered in glass, what was the minimum amount of glass used for the exterior?

