Name: Date: Pts:

Technical Math Mod C → Geometry
Lesson 9 - Study Guide – 3-D Solids

1) True or False? A geometric solid has only two dimensions: length and height.

2) True or False? The vertices of a polyhedron are the polygons that make the polyhedron's surface.

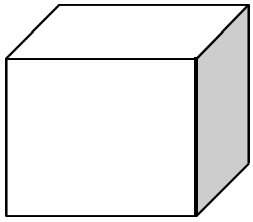
3) Which of the following is a solid made from two parallel, congruent discs and all the points between them? Circle all that apply

A prism B cube C pyramid

D cone E sphere F cylinder

4) Which of the following terms correctly describe the figure given below? Circle all that apply.

A solid
B cube
C pyramid
D prism
E polygon
F polyhedron



5) Which of the following is a solid consisting of a polygon, a point not in the same plane as the polygon, and all the points between them?

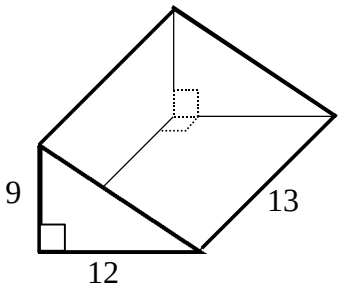
A prism B cone C cylinder D pyramid

6) How many faces does a octahedron have?

7) A right triangular prism has a height of 15. The prism's base has sides of lengths 6, 8, and 10. What is the lateral area of the prism?

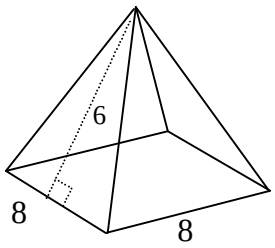
8) Fill in the blank. A right prism with a base perimeter of 12 units, a height of 8 units, and a total base area of 14 square units has a surface area of _____ square units.

9) What is the surface area of the right prism given below?



10) True or False? A regular pyramid has a regular polygon as its base and a vertex over the base's center.

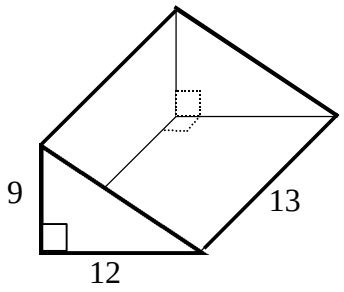
11) What is the surface area of the regular square based pyramid given below?



12) A right cylinder has a radius of 5 and a height of 15. What is its surface area? If necessary, round your answer to two decimal places.

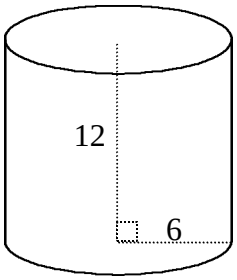
13) What is the surface area of a right cone with a slant height of 7 and a radius of 5? If necessary, round your answer to two decimal places.

14) What is the volume of the prism given below?



15) What is the volume of the cylinder shown below?

A $432\ \pi$ units^3
B $72\ \pi$ units^3
C $576\ \pi$ units^3
D $360\ \pi$ units^3



16) What is the volume of a cone with a radius of 5 and a height of 13?

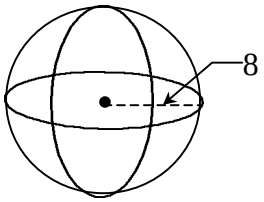
A $325\ \pi$ units^3
B $433.33\ \pi$ units^3
C $108.33\ \pi$ units^3
D $65\ \pi$ units^3

17) What is the volume of a sphere with a radius of 5?

A $93.75\ \pi$ units^3
B $33.33\ \pi$ units^3
C $125\ \pi$ units^3
D $166.67\ \pi$ units^3

18) What is the surface area of a sphere with radius 6? Round your answer to 2 decimal places.

19) What is the volume of the sphere given below? Round your answer to two decimal places.



20) Which of the following correctly represents the volume of a sphere with radius r?

A $4/3\ \pi\ r^3$
B $3/4\ \pi\ r^3$
C $3\ \pi\ r^3$
D $4/3\ \pi\ r^2$

21) The ratio of the lengths of corresponding parts in two similar solids is 4:1. What is the ratio of their surface areas?

A 8 : 1
B 1 : 16
C 16 : 1
D 4 : 1

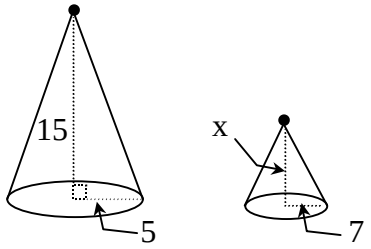
22) The ratio of the surface areas of two similar solids is 256:100. What is the ratio of their corresponding side lengths?

A 25.6 : 10
B 2.56 : 1
C 128 : 50
D 16 : 10

23) Two similar cones have radii of 6 and 3, respectively. What is the ratio of their volumes?

A 216 : 27
B 216/9 : 27
C 8 : 27
D 8 : 1

24) What is the value of x, for the two similar cones? Round your answer to 2 decimal places.



25) Tiana would like to buy ice cream cones for her birthday party, but she wants cones with the largest volume. Which of the following brands of ice cream cones should she buy?

A Brand A B Brand B C Either – the cones have equal volumes

Brand A = Height of Cone = 12 cm
= Radius of Cone Base = 4 cm

Brand B = Height of Cone = 48 cm
= Radius of Cone Base = 2 cm