

Geometry - Chapter 11 Test SAMPLE

Short Answer

1. Use Euler's Formula to find the missing number.

Vertices: 16

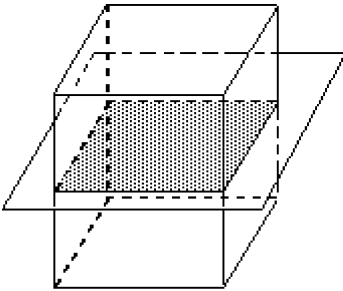
Edges: 37

Faces: ■

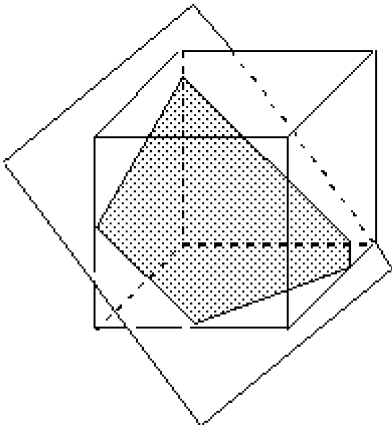
2. Mario's company makes unusually shaped imitation gemstones. One gemstone had 10 faces and 12 vertices. How many edges did the gemstone have?

Describe the cross section.

3.



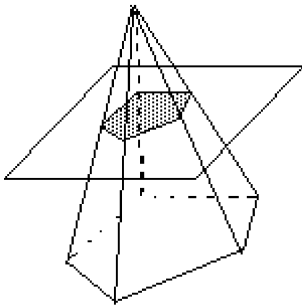
4.



Name: _____

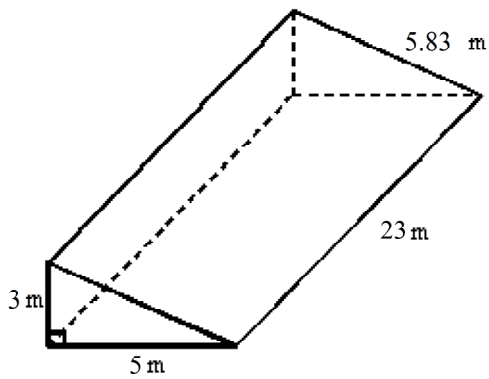
ID: A

5. Pierre built the model shown in the diagram below for a social studies project. He wants to be able to show the inside of his model, so he sliced the figure as shown. Describe the cross section he created.



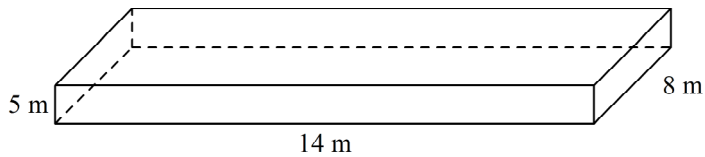
Use formulas to find the lateral area and surface area of the given prism. Show your answer to the nearest whole number.

6.



Not drawn to scale

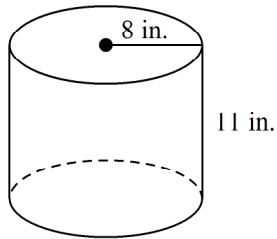
7.



Not drawn to scale

Find the surface area of the cylinder in terms of π .

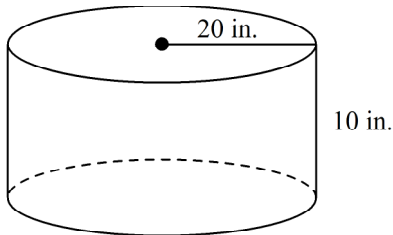
8.



Not drawn to scale

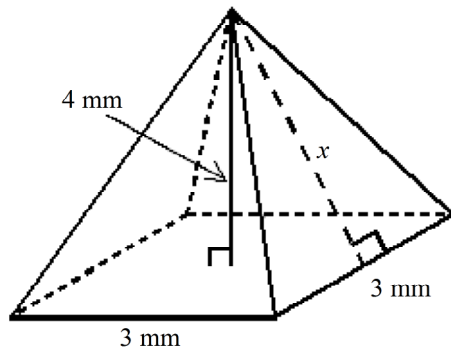
9. The radius of the base of a cylinder is 28 cm and its height is 48 cm. Find the surface area of the cylinder in terms of π .

10. Find the surface area of the cylinder to the nearest whole number.



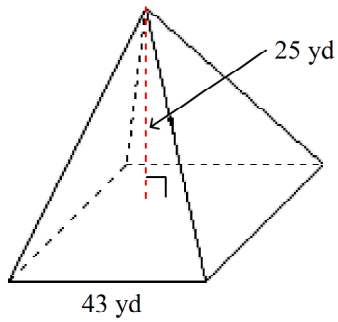
Not drawn to scale

11. Find the slant height x of the pyramid shown to the nearest tenth.



Not drawn to scale

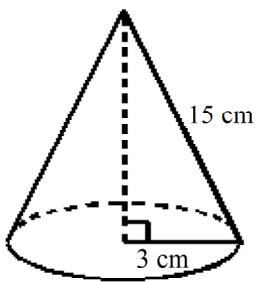
12. Find the lateral area of the pyramid shown to the nearest whole number.



Not drawn to scale

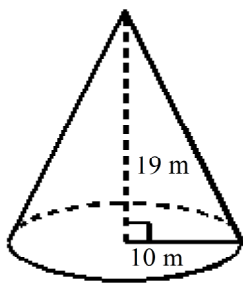
13. Find the lateral area of a regular pentagonal pyramid that has a slant height of 14 in. and a base side length of 6 in.

14. Find the surface area of the cone in terms of π .



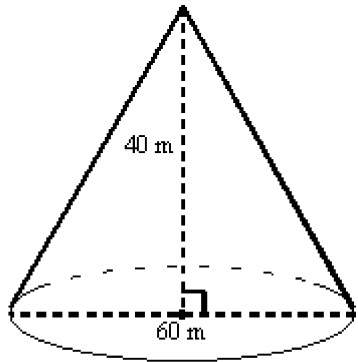
Not drawn to scale

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



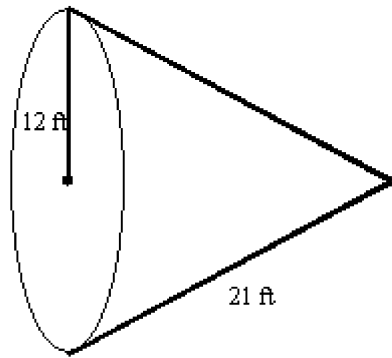
Not drawn to scale

16. Find the lateral area of the cone to the nearest whole number.



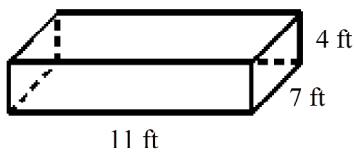
Not drawn to scale

17. Find the lateral area and surface area of the cone. Round the answers to the nearest tenth. (The figure is not drawn to scale.)



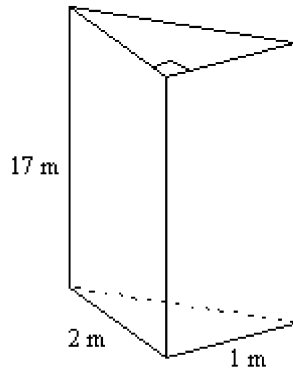
Find the volume of the given prism. Round to the nearest tenth if necessary.

- 18.



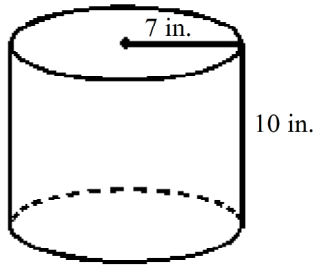
Not drawn to scale

19.



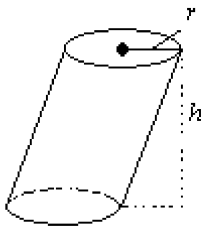
Find the volume of the cylinder in terms of π .

20.



Not drawn to scale

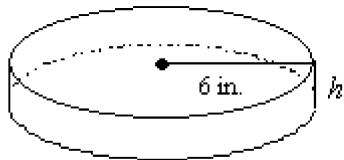
21.



$h = 6$ and $r = 3$

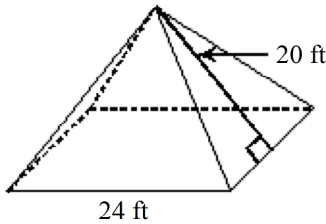
22. Find the height of the cylinder.

$$V = 271.4 \text{ in.}^3$$



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

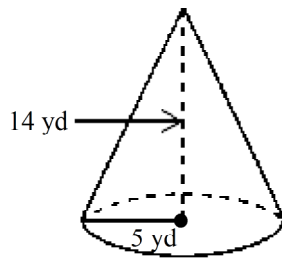
23.



Not drawn to scale

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

24.



Not drawn to scale

Find the surface area of the sphere with the given dimension. Leave your answer in terms of π .

25. radius of 30 m
26. A balloon has a circumference of 23 cm. Use the circumference to approximate the surface area of the balloon to the nearest square centimeter.
27. Find the similarity ratio of a cube with volume 729 m^3 to a cube with volume 3375 m^3 .
28. Find the similarity ratio of a prism with surface area 36 ft^2 to a similar prism with surface area 225 ft^2 .
29. 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?

Geometry - Chapter 11 Test SAMPLE

Answer Section

SHORT ANSWER

1. ANS:
23

PTS: 1 DIF: L2 REF: 11-1 Space Figures and Cross Sections
OBJ: 11-1.1 Identifying Nets of Space Figures TOP: 11-1 Example 2
KEY: polyhedron | face | vertices | edge | Euler's Formula

2. ANS:
20 edges

PTS: 1 DIF: L3 REF: 11-1 Space Figures and Cross Sections
OBJ: 11-1.1 Identifying Nets of Space Figures TOP: 11-1 Example 2
KEY: edge | Euler's Formula | face | polyhedron | problem solving | word problem | vertices

3. ANS:
square

PTS: 1 DIF: L2 REF: 11-1 Space Figures and Cross Sections
OBJ: 11-1.2 Describing Cross Sections TOP: 11-1 Example 4
KEY: cross section

4. ANS:
pentagon

PTS: 1 DIF: L2 REF: 11-1 Space Figures and Cross Sections
OBJ: 11-1.2 Describing Cross Sections TOP: 11-1 Example 4
KEY: cross section

5. ANS:
pentagon

PTS: 1 DIF: L3 REF: 11-1 Space Figures and Cross Sections
OBJ: 11-1.2 Describing Cross Sections TOP: 11-1 Example 4
KEY: cross section | word problem

6. ANS:
318.09 m²; 333 m²

PTS: 1 DIF: L2 REF: 11-2 Surface Areas of Prisms and Cylinders
OBJ: 11-2.1 Finding Surface Area of a Prism STA: CA GEOM 8.0 | CA GEOM 9.0
TOP: 11-2 Example 2
KEY: surface area formulas | lateral area | surface area | prism | surface area of a prism

7. ANS:

220 m^2 ; 444 m^2

PTS: 1 DIF: L2 REF: 11-2 Surface Areas of Prisms and Cylinders
 OBJ: 11-2.1 Finding Surface Area of a Prism STA: CA GEOM 8.0| CA GEOM 9.0
 TOP: 11-2 Example 2
 KEY: surface area formulas | lateral area | surface area | prism | surface area of a prism

8. ANS:

$304\pi \text{ in.}^2$

PTS: 1 DIF: L2 REF: 11-2 Surface Areas of Prisms and Cylinders
 OBJ: 11-2.2 Finding Surface Area of a Cylinder STA: CA GEOM 8.0| CA GEOM 9.0
 TOP: 11-2 Example 3
 KEY: surface area of a cylinder | cylinder | surface area formulas | surface area

9. ANS:

$4256\pi \text{ cm}^2$

PTS: 1 DIF: L2 REF: 11-2 Surface Areas of Prisms and Cylinders
 OBJ: 11-2.2 Finding Surface Area of a Cylinder STA: CA GEOM 8.0| CA GEOM 9.0
 TOP: 11-2 Example 3
 KEY: cylinder | surface area of a cylinder | surface area formulas | surface area | word problem

10. ANS:

3770 in.^2

PTS: 1 DIF: L3 REF: 11-2 Surface Areas of Prisms and Cylinders
 OBJ: 11-2.2 Finding Surface Area of a Cylinder STA: CA GEOM 8.0| CA GEOM 9.0
 TOP: 11-2 Example 3
 KEY: surface area of a cylinder | cylinder | surface area formulas | surface area

11. ANS:

4.3 mm

PTS: 1 DIF: L2 REF: 11-3 Surface Areas of Pyramids and Cones
 OBJ: 11-3.1 Finding Surface Area of a Pyramid STA: CA GEOM 8.0| CA GEOM 9.0
 TOP: 11-3 Example 2
 KEY: pyramid | slant height of a pyramid | Pythagorean Theorem

12. ANS:

2836 yd^2

PTS: 1 DIF: L2 REF: 11-3 Surface Areas of Pyramids and Cones
 OBJ: 11-3.1 Finding Surface Area of a Pyramid STA: CA GEOM 8.0| CA GEOM 9.0
 TOP: 11-3 Example 2
 KEY: slant height of a pyramid | lateral area | pyramid | surface area formulas | Pythagorean Theorem

13. ANS:

$$210 \text{ in.}^2$$

PTS: 1 DIF: L3 REF: 11-3 Surface Areas of Pyramids and Cones
 OBJ: 11-3.1 Finding Surface Area of a Pyramid STA: CA GEOM 8.0| CA GEOM 9.0
 KEY: surface area of a pyramid | lateral area | pyramid | surface area formulas

14. ANS:

$$54\pi \text{ cm}^2$$

PTS: 1 DIF: L2 REF: 11-3 Surface Areas of Pyramids and Cones
 OBJ: 11-3.2 Finding Surface Area of a Cone STA: CA GEOM 8.0| CA GEOM 9.0
 TOP: 11-3 Example 3
 KEY: surface area of a cone | surface area formulas | surface area | cone

15. ANS:

$$21 \text{ m}$$

PTS: 1 DIF: L2 REF: 11-3 Surface Areas of Pyramids and Cones
 OBJ: 11-3.2 Finding Surface Area of a Cone STA: CA GEOM 8.0| CA GEOM 9.0
 TOP: 11-3 Example 4 KEY: cone | slant height of a cone | Pythagorean Theorem

16. ANS:

$$4712 \text{ m}^2$$

PTS: 1 DIF: L3 REF: 11-3 Surface Areas of Pyramids and Cones
 OBJ: 11-3.2 Finding Surface Area of a Cone STA: CA GEOM 8.0| CA GEOM 9.0
 TOP: 11-3 Example 4
 KEY: cone | surface area of a cone | surface area formulas | surface area

17. ANS:

$$\text{L.A.} = 791.7 \text{ ft}^2; \text{S.A.} = 1244.1 \text{ ft}^2$$

PTS: 1 DIF: L3 REF: 11-3 Surface Areas of Pyramids and Cones
 OBJ: 11-3.2 Finding Surface Area of a Cone STA: CA GEOM 8.0| CA GEOM 9.0
 KEY: cone | surface area of a cone | lateral area | surface area formulas | surface area

18. ANS:

$$308 \text{ ft}^3$$

PTS: 1 DIF: L2 REF: 11-4 Volumes of Prisms and Cylinders
 OBJ: 11-4.1 Finding Volume of a Prism STA: CA GEOM 8.0| CA GEOM 9.0
 TOP: 11-4 Example 1
 KEY: volume of a rectangular prism | volume formulas | volume | prism

19. ANS:

$$17 \text{ m}^3$$

PTS: 1 DIF: L3 REF: 11-4 Volumes of Prisms and Cylinders
 OBJ: 11-4.1 Finding Volume of a Prism STA: CA GEOM 8.0| CA GEOM 9.0
 TOP: 11-4 Example 2
 KEY: volume of a triangular prism | volume formulas | volume | prism

20. ANS:

$$490\pi \text{ in.}^3$$

PTS: 1 DIF: L2 REF: 11-4 Volumes of Prisms and Cylinders
 OBJ: 11-4.2 Finding Volume of a Cylinder STA: CA GEOM 8.0| CA GEOM 9.0
 TOP: 11-4 Example 3 KEY: volume of a cylinder | cylinder | volume formulas | volume

21. ANS:

$$54\pi \text{ in.}^3$$

PTS: 1 DIF: L2 REF: 11-4 Volumes of Prisms and Cylinders
 OBJ: 11-4.2 Finding Volume of a Cylinder STA: CA GEOM 8.0| CA GEOM 9.0
 TOP: 11-4 Example 3
 KEY: volume of a cylinder | cylinder | volume formulas | volume | oblique cylinder

22. ANS:

$$2.4 \text{ in.}$$

PTS: 1 DIF: L3 REF: 11-4 Volumes of Prisms and Cylinders
 OBJ: 11-4.2 Finding Volume of a Cylinder STA: CA GEOM 8.0| CA GEOM 9.0
 KEY: cylinder | volume of a cylinder | volume

23. ANS:

$$3072 \text{ ft}^3$$

PTS: 1 DIF: L2 REF: 11-5 Volumes of Pyramids and Cones
 OBJ: 11-5.1 Finding Volume of a Pyramid STA: CA GEOM 8.0| CA GEOM 9.0
 TOP: 11-5 Example 1
 KEY: volume of a pyramid | pyramid | volume formulas | volume | height of a pyramid | Pythagorean Theorem

24. ANS:

$$366.5 \text{ yd}^3$$

PTS: 1 DIF: L2 REF: 11-5 Volumes of Pyramids and Cones
 OBJ: 11-5.2 Finding Volume of a Cone STA: CA GEOM 8.0| CA GEOM 9.0
 TOP: 11-5 Example 3 KEY: volume of a cone | cone | volume formulas | volume

25. ANS:

$$3,600\pi \text{ m}^2$$

PTS: 1 DIF: L2 REF: 11-6 Surface Areas and Volumes of Spheres
 OBJ: 11-6.1 Finding Surface Area and Volume of a Sphere STA: CA GEOM 8.0| CA GEOM 9.0
 TOP: 11-6 Example 1
 KEY: surface area of a sphere | surface area formulas | surface area | sphere

26. ANS:

168 cm²

PTS: 1 DIF: L2 REF: 11-6 Surface Areas and Volumes of Spheres
OBJ: 11-6.1 Finding Surface Area and Volume of a Sphere STA: CA GEOM 8.0| CA GEOM 9.0
TOP: 11-6 Example 2
KEY: circumference of a circle | surface area of a sphere | surface area | surface area formulas | sphere

27. ANS:

3 : 5

PTS: 1 DIF: L2 REF: 11-7 Areas and Volumes of Similar Solids
OBJ: 11-7.1 Finding Relationships in Area and Volume STA: CA GEOM 11.0
TOP: 11-7 Example 2 KEY: similarity ratio | volumes of similar solids

28. ANS:

2 : 5

PTS: 1 DIF: L2 REF: 11-7 Areas and Volumes of Similar Solids
OBJ: 11-7.1 Finding Relationships in Area and Volume STA: CA GEOM 11.0
TOP: 11-7 Example 2 KEY: similarity ratio | surface areas of similar solids | prism

29. ANS:

288 ft³

PTS: 1 DIF: L2 REF: 11-7 Areas and Volumes of Similar Solids
OBJ: 11-7.1 Finding Relationships in Area and Volume STA: CA GEOM 11.0
TOP: 11-7 Example 3
KEY: similarity ratio | ratio of surface areas of similar solids | ratio of volumes of similar solids