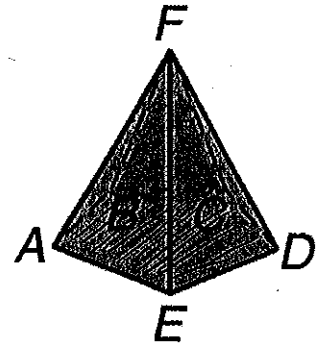


Geometry B
Unit 11 Review

Name Key
Hour _____ Date _____

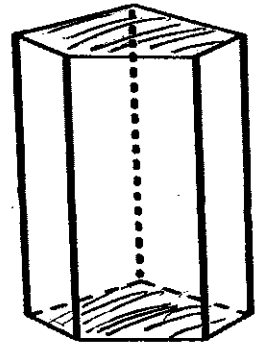
1. Refer to the figure at the right.

- a. Name the figure: pentagonal pyramid
- b. Name the base: pentagon ABCDE
- c. Name the faces: $\triangle AFE$, $\triangle EFD$, $\triangle DFC$, $\triangle CFB$, $\triangle BFA$, and pentagon ABCDE
- d. Name the edges: \overline{AB} , \overline{BC} , \overline{CD} , \overline{DE} , \overline{EA} , \overline{FA} , \overline{FB} , \overline{FC} , \overline{FD} , \overline{FE}
- e. Name the vertices: A, B, C, D, E, F



2. Name the figure at the right. Then count the number of faces, edges, and vertices.

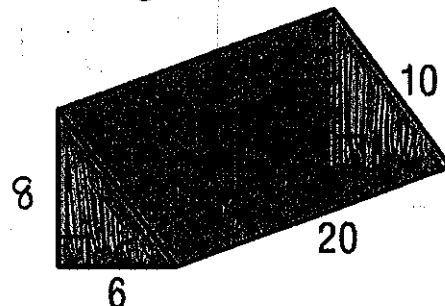
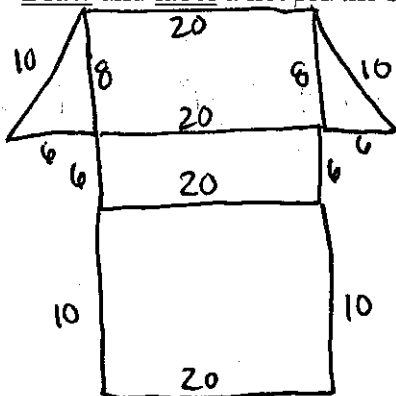
- a. Name: pentagonal prism
- b. # of Faces: 7
- c. # of Edges: 15
- d. # of Vertices: 10



For #3-6, write the name of the polygon that matches the specified information.

3. a pyramid with six faces pentagonal pyramid
4. a prism with ten faces octagonal prism
5. a solid with one base and a total of six faces pentagonal pyramid
6. a solid with two bases and a total of five faces triangular prism

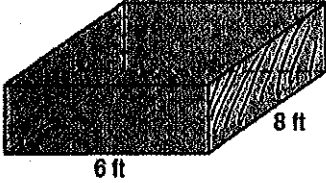
7. Draw and label a net for the solid at the right.

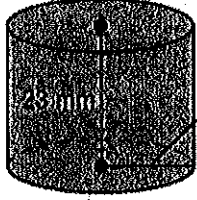


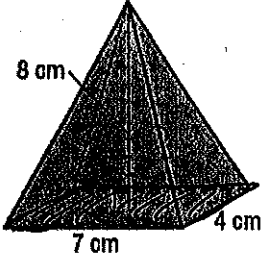
$$a^2 + b^2 = c^2$$

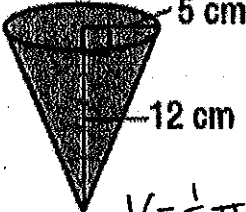
$$a = 8$$

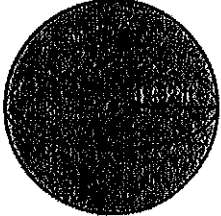
Find the volume of each figure. Show ALL calculations. Round to 2 decimals, if necessary.

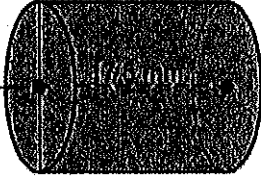
8.  $V = B \cdot h$
 $V = (8 \cdot 2) \cdot 6$
 $V = 96 \text{ ft}^3$

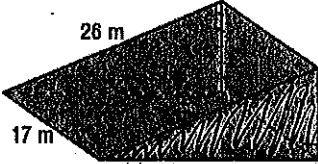
9.  $V = \pi r^2 h$
 $= \pi 15^2 \cdot 23$
 $V = 16257.74 \text{ mm}^3$

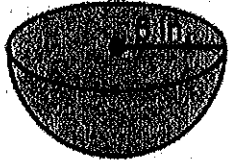
10.  $V = \frac{1}{3} B \cdot h$
 $\frac{1}{3} \cdot 28 \cdot 8$
 $B = b \cdot h$
 $= 7 \cdot 4 = 28$
 $V = 74.67 \text{ cm}^3$

11.  $V = \frac{1}{3} \pi r^2 h$
 $= \frac{1}{3} \pi 5^2 \cdot 12$
 $V = 100\pi = 314.16 \text{ cm}^3$

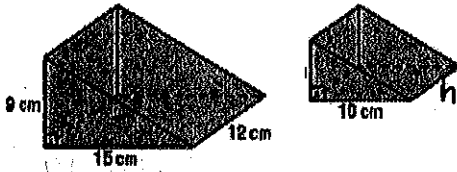
12.  $V = \frac{4}{3} \pi r^3$
 $\frac{4}{3} \pi (12.32)^3$
 $V = 7832.87 \text{ ft}^3$

13.  $V = \pi r^2 h$
 $= \pi 8^2 \cdot 17.5$
 $V = 1120\pi = 3518.58 \text{ mm}^3$

14.  $a^2 + b^2 = c^2$
 $a^2 + 10^2 = 26^2$
 $a = 24$
 $V = B \cdot h$
 $V = 120 \cdot 17$
 $V = 2040 \text{ m}^3$
 $B = \frac{1}{2} b \cdot h$
 $\frac{1}{2} \cdot 24 \cdot 10$
 $B = 120$

15.  $V = \frac{2}{3} \pi r^3$
 $= \frac{2}{3} \pi 6^3$
 $V = 144\pi = 452.39 \text{ in}^3$

For 24 - 26, use the similar prisms below.



24. If the height of the larger prism is 12 cm, what is the height of the smaller prism? 25. 8 cm

$$\frac{15}{10} = \frac{12}{h} \quad 15h = 120$$

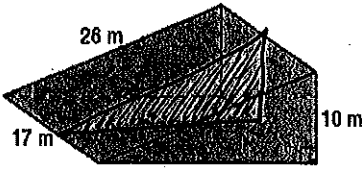
25. If the surface area of the larger prism is 632.9 cm², what is the surface area of the smaller prism? 26. 281.29 cm²

$$\frac{15^2}{10^2} = \frac{632.9}{A} \quad \frac{225 A = 63290}{225} \quad \frac{63290}{225}$$

26. If the volume of the smaller prism is 240 cm³, what is the volume of the larger prism? 27. 810 cm³

$$\frac{15^3}{10^3} = \frac{V}{240} \quad \frac{1000 V = 810000}{1000} \quad \frac{810000}{1000} \quad V = 810$$

16. Sketch a cross section parallel to the base of the solid. Then find the area of the cross section.



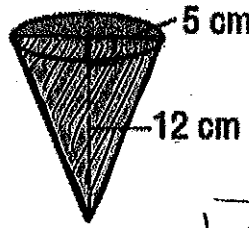
$$a^2 + 10^2 = 26^2$$

$$a = 24$$

$$A = \frac{1}{2} b \cdot h$$

$$\frac{1}{2} \cdot 24 \cdot 10 = 120 \text{ m}^2$$

17. Sketch a cross section perpendicular to the base and through the vertex of the solid. Then find the area of the cross section.

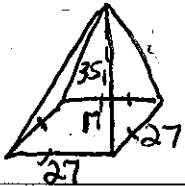


$$A = \frac{1}{2} b \cdot h$$

$$= \frac{1}{2} \cdot 10 \cdot 12$$

$$A = 60 \text{ cm}^2$$

18. Draw a square pyramid that has a height of 35 inches and a base with a side length of 27 inches. Then find the volume.



$$V = \frac{1}{3} B \cdot h$$

$$B = 27 \cdot 27 = 729$$

$$V = \frac{1}{3} \cdot 729 \cdot 35 = 8505 \text{ in}^3$$

19. The volume of a pyramid is 120 cubic = V meters, and the area of the base is 50 square = B meters. Find the height of the pyramid.

$$V = \frac{1}{3} B \cdot h$$

$$(120 = \frac{1}{3} \cdot 50 \cdot h)^3$$

$$\frac{360}{50} = \frac{50h}{50} \quad h = 7.2 \text{ m}$$

20. The volume of a cone is 870π cubic meters. The cone has a base with a radius of 15 meters. Find the height.

$$V = \frac{1}{3} \pi r^2 h$$

$$(870\pi = \frac{1}{3} \pi 15^2 h)^3$$

$$\frac{2610}{225} = \frac{225h}{225}$$

$$h = 11.6 \text{ m}$$

21. The volume of a pyramid is 1314 cubic = V inches. The pyramid's height is 18 inches. Find the area of the base.

$$V = \frac{1}{3} B \cdot h$$

$$1314 = \frac{1}{3} \cdot B \cdot 18$$

$$\frac{1314}{6} = \frac{6B}{6}$$

$$B = 219 \text{ in}^2$$

22. The volume of a cylinder is 4864π cubic centimeters. The radius is 16 centimeters. Find the height.

$$V = \pi r^2 h$$

$$4864\pi = \pi 16^2 h$$

$$\frac{4864}{256} = \frac{256h}{256}$$

$$h = 19 \text{ cm}$$

23. The volume of a pyramid is 2133 cubic meters, and the area of the base is 81 square meters. Find the height of the pyramid.

$$V = \frac{1}{3} B h$$

$$2133 = \frac{1}{3} \cdot 81 \cdot h$$

$$\frac{2133}{27} = \frac{27h}{27}$$

$$h = 79 \text{ m}$$