Ch. 6 Practice Test
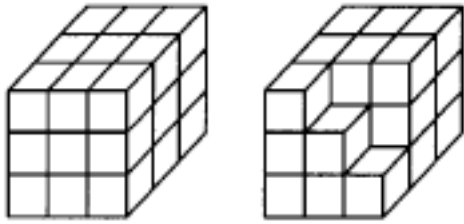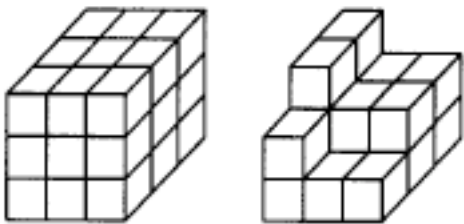
Name_____
Date Jan. 27, 2005

1. The large block shown below on the left had some smaller blocks removed from it to form the shape on the right. What is the least number of blocks needed to remake the prism?
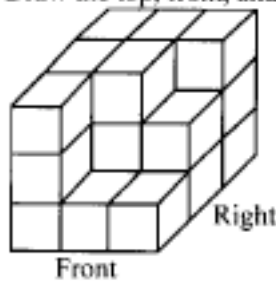

2. The large block shown below on the left had some smaller blocks removed from it to form the shape on the right. How many, in all, have been removed?

3. Create an orthographic drawing for the object below.
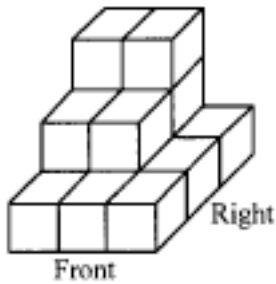
4. Draw the top, front, and right side views of the model building shown below.


5. This rectangular solid is made of how many small cubes?

6. To make a box for her cat to climb on, Rachel wants to cover a wooden cube with carpeting on 4 of its faces. If the cube has an edge of 2 feet, how much surface area will Rachel have to cover?

7. Jill is wrapping a present. She needs a box to put her gift in before she wraps it. The box must have at least 12 cubic units of space inside. Is the space inside this box big enough? Explain your answer.
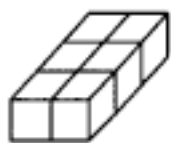
8. The surface area of a cube is 726 in.^{2}. What is the length of one edge of the cube?

9. Name a pair of parallel planes. Use three points contained by the plane to identify the plane.
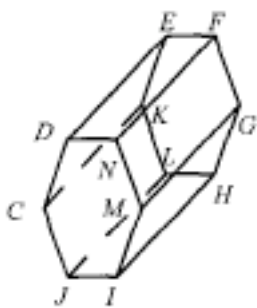

10. Find the number of vertices, faces, and edges for the figure below.
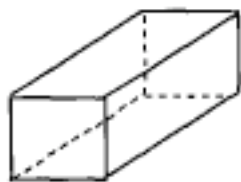
11. Which of the following statements is false?

[A] A plane is determined by any three points.

[B] If a line and a plane have no points in common, then they are parallel.

[C] Any two points are always collinear as well as coplanar.

[D] A line separates a plane into three disjoint subsets.

12. Can the intersection of two planes be a point? Explain.

13. When two planes intersect, consecutive dihedral angles are __?__ .

14. The measure of each dihedral angle in a cube is __?__ .

15. A right prism has a pentagonal base. How many edges does it have?

16. What is the number of faces for a rectangular prism?

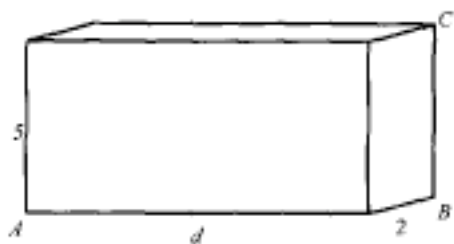17. Is this a sketch of a prism? Explain your reasoning.
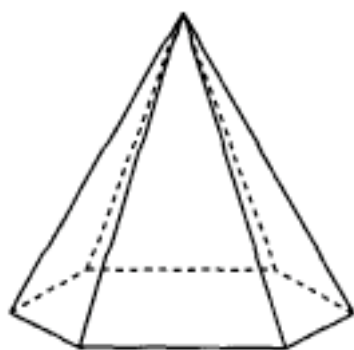
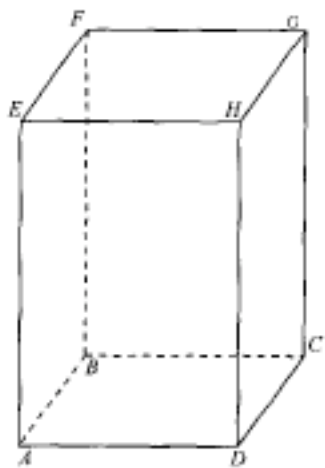18. Name the shapes of the faces seen in the prism below.
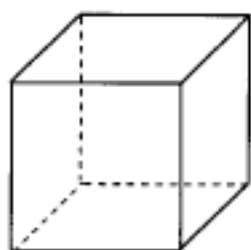
19. A n-gonal prism has how many lateral faces?

20. Find the length of diagonal $\overline{AC}$ in the rectangular solid shown. Dimensions are in feet.

21. Find the length of $\overline{AG}$ in the figure below if the prism is 6 feet by 10 feet by 15 feet.
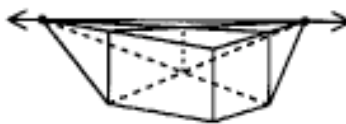
22. Locate the point (3, –4, –5) in a three-dimensional coordinate system.

23. Which octant contains the point $(-7, -7, -9)$?

24. Plot the point $(-5, 3, -5)$ in a three-dimensional coordinate system.

25. Find the distance between the points $(-3, -8, -1)$ and $(-5, -4, -2)$.

26. A 25-foot pole is placed at the corner of a parking lot that is 100 feet by 200 feet, and a rope is attached from the opposite corner. How long is the rope?

27. Find the intercepts of the plane $-138x + 42y - 39z - 471 = 0$.

28. Which of the following planes contain the line $6x + 15y = 88$?

[A] xz-plane   [B] yz-plane   [C] xy-plane   [D] none of these

29. When $x = 3t + 9$, $y = 3t - 9$, and $z = t - 12$, what are the coordinates for the point on this line in space when $t = 6$?

30. Show the steps in creating a perspective drawing using the given point and a dilation with a scale factor of $\frac{1}{2}$.
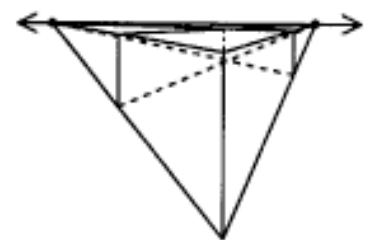
31. Which of the drawings shows a cube in two-point perspective drawn using the segment and points given below?
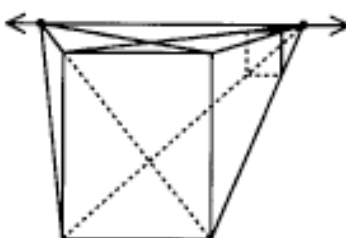
[A]   [B]

[C]   [D]