

# Chapter 10

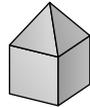
## 10.1 Building and Packing Prisms

- 3 sides, 3 vertices
  - 9 edges, 5 faces, 6 vertices
- 12 edges, 6 faces, 8 vertices
  - 15 edges, 7 faces, 10 vertices

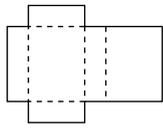
## 10.2 Building Objects from Nets

- (a), (d), and (e)
- a) C    b) A and C    c) B    d) B
- a) It will look like a cube with a square pyramid on top.

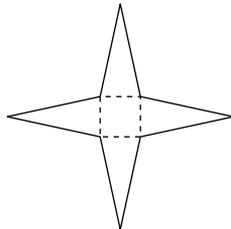
b)



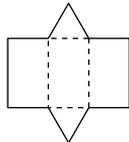
4. a)



b)

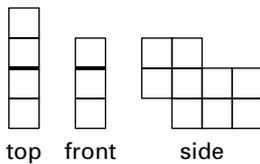


c)

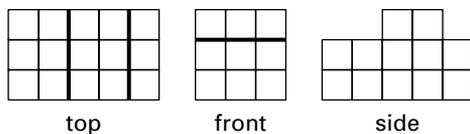


## 10.3 Top, Front, and Side Views of Cube Structures

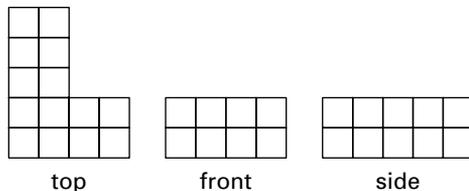
1. a)



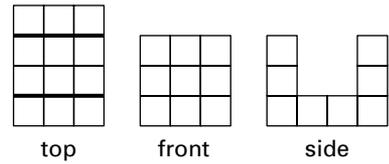
b)



c)



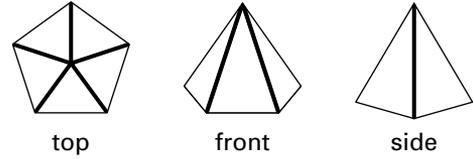
d)



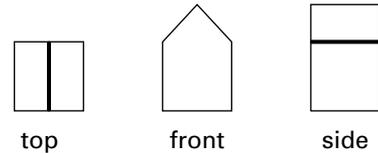
## 10.4 Top, Front, and Side Views of 3-D Objects

- rectangular prism
- hexagonal prism

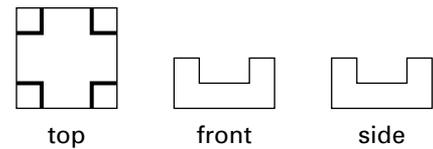
3.



4.



5.

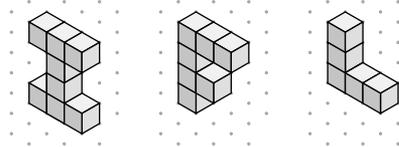


## 10.5 Isometric Drawings of Cube Structures

1. a)

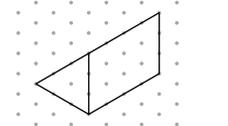
b)

c)

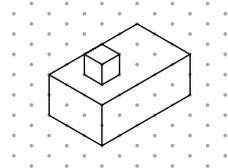


## 10.6 Isometric Drawings of 3-D Objects

1. a)



b)



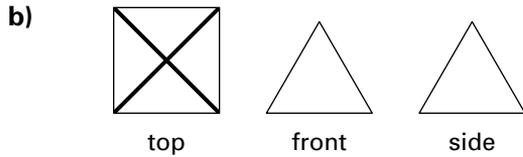
## 10.7 Communicating about Views

- Follow these steps to draw top, front, and side views of a pyramid with a square base. (1) Draw the pyramid. (2) Label the front and sides. (3) Imagine you are looking at the pyramid from above. You would see the square base, the tip of the pyramid, and the edges of the pyramid

going from the tip to each vertex of the base. Draw what you see using thick black lines to show changes in depth.

(4) Imagine you are looking at the pyramid from the front. You would see only the face of a triangle. Draw what you see.

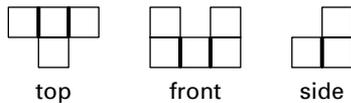
(5) Imagine you are looking at the pyramid from one side. You would see only the face of a triangle. Draw what you see.



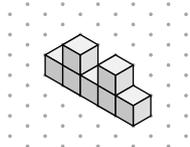
2. Follow these steps to build a structure using the top, front, and side views. (1) Start with the side view, because there are no changes in depth. Use six cubes to build the side. (2) Look at the top view of the structure you have built. It matches the top view in the drawing. (3) Look at the front view of the structure you have built. It matches the front view in the drawing. (4) Your structure is finished, because it matches all three views.

### Test Yourself

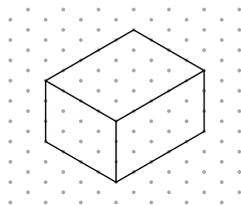
1. C  
2. A and B  
3.



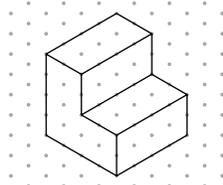
4.



5. a)



b)



6. Follow these steps to draw top, front, and side views of the structure. (1) Imagine you are looking at the structure from above. You will see six cubes arranged in a rectangle with a width of two cubes and a length of three cubes. The top left cube is raised above the rest. (2) Imagine you are looking at the structure from the front. There are two cubes side by side. Directly above the cube on the left is another cube at a different depth. (3) Imagine you are looking at the structure from the right. There are three cubes in a row. Directly above the cube on the far right is another cube at a different depth.

## Chapter 11

### 11.1 Surface Area of a Rectangular Prism

- 4 cm by 6 cm;  $24 \text{ cm}^2$
  - 4 cm by 2 cm;  $8 \text{ cm}^2$
  - 2 cm by 6 cm;  $12 \text{ cm}^2$
  - Surface Area =  $2 \times (24 \text{ cm}^2 + 8 \text{ cm}^2 + 12 \text{ cm}^2) = 88 \text{ cm}^2$
- a)  $28 \text{ cm}^2$     b)  $32 \text{ cm}^2$     c)  $78 \text{ cm}^2$
- a)  $46 \text{ cm}^2$     b)  $280 \text{ cm}^2$     c)  $138.2 \text{ cm}^2$

### 11.2 Volume of a Rectangular Prism

- 12 cubes
  - 32 cubes
  - 120 cubes
- $64 \text{ cm}^3$
  - $1176 \text{ cm}^3$
  - $12 \text{ cm}^3$
  - $450 \text{ cm}^3$
  - $64 \text{ cm}^3$
  - $196 \text{ cm}^3$
  - $100\,000 \text{ cm}^3$
  - $1237.5 \text{ cm}^3$
- She should buy (c), the Super Clean filter.
- 4 cm
  - 4 cm
  - 9 cm
  - $260 \text{ cm}^3$
  - 8 cm
  - 12 cm
- Two possible sets of dimensions are 10 m by 3 m by 2 m; and 6 m by 5 m by 2 m.
- Brand 3 is the best buy, because it has the lowest price per  $\text{cm}^3$ . (Find the volume, then divide the price by the volume to find the price per  $\text{cm}^3$ .)
- $128 \text{ units}^3$
- Yes, Miguel should accept. Jody's box has a larger volume than his box.

### 11.3 Solve Problems by Guessing and Testing

- $2 \times 6 \times 10$
  - $12 \times 5 \times 2$
  - $6 \times 5 \times 4$
  - $4 \times 15 \times 2$