

Solids

For 1 through 3, use the solid at the right.

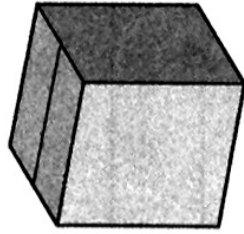
1. Name the vertices.

2. Name the faces.

3. Name the edges.

For 4 through 6, tell which solid figure each object resembles.

4.



5.

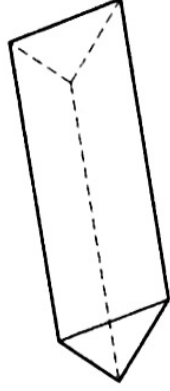


6.



7. Which term best describes the figure at the right?

- A Cone
- B Triangular prism
- C Pyramid
- D Rectangular prism

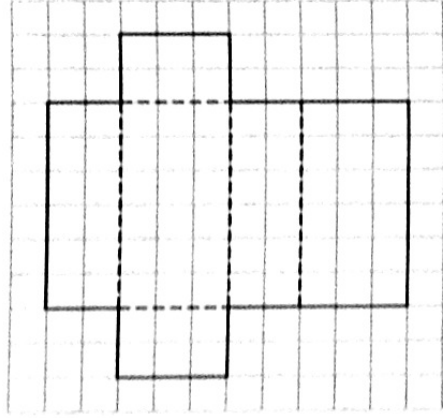


8. **Explain It** How many vertices does a cone have? Explain.

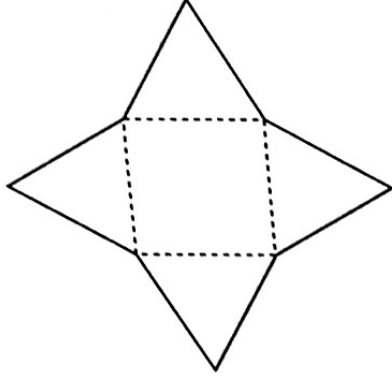
Relating Shapes and Solids

For 1 and 2, predict what shape each net will make.

1.



2.



Reasoning For 3 through 5, tell which solid figures could be made from the descriptions given.

3. A net that has 6 squares

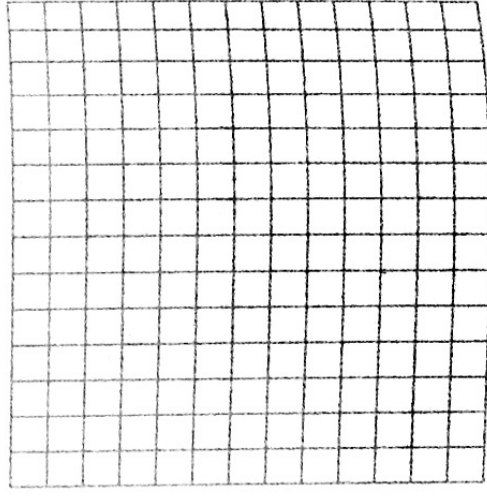
4. A net that has 4 triangles

5. A net that has 2 circles and a rectangle

6. Which solid can be made by a net that has exactly one circle in it?

A Cone B Cylinder C Sphere D Pyramid

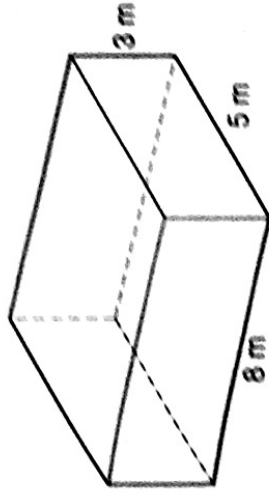
7. **Explain It** Draw a net for a triangular pyramid. Explain how you know your diagram is correct.



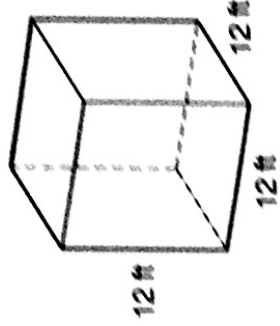
Surface Area

Find the surface area of each rectangular prism.

1.



2.



Strategy Practice Music and computer CDs are often stored in plastic cases called jewel cases.

3. One size of jewel case is $140 \text{ mm} \times 120 \text{ mm} \times 4 \text{ mm}$. What is the surface area of this jewel case?
- _____

4. A jewel case that holds 2 CDs is $140 \text{ mm} \times 120 \text{ mm} \times 9 \text{ mm}$. What is the surface area of this jewel case?
- _____

5. What is the surface area of a rectangular prism with the dimensions 3 in. by 4 in. by 8 in.?

A 96 in^2 **B** 112 in^2 **C** 136 in^2 **D** 152 in^2

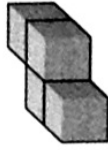
6. **Explain It** Explain why the formula for finding the surface area of a rectangular prism is helpful.
- _____
- _____
- _____

Name _____

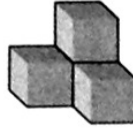
Views of Solids

For 1 and 2, draw front, side, and top views of each stack of unit blocks.

1.

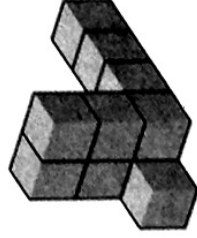


2.



3. Reasoning In the figure for Exercise 2, how many blocks are not visible?

4. In the figure at the right, how many unit blocks are being used?



A 8

B 9

C 10

D 11

5. Explain It A figure is made from 8 unit blocks. It is 3 units tall. What is the maximum length the figure could be? Explain.

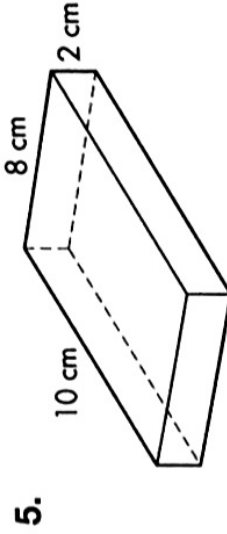
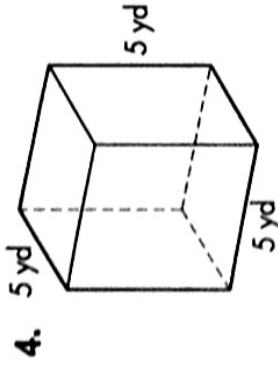
Volume

Find the volume of each rectangular prism.

1. base area 56 in.², height 6 in.

2. base area 32 cm², height 12 cm

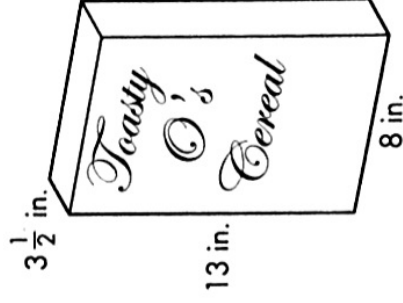
3. base area 42 m², height 8 m



6. **Algebra** What is the height of a solid with a volume of 120 m³ and base area of 30 m²?

Michael bought some cereal at the grocery store.

7. What is the base area of the box?



8. What is the volume of the box?

9. What is the base area of this figure?

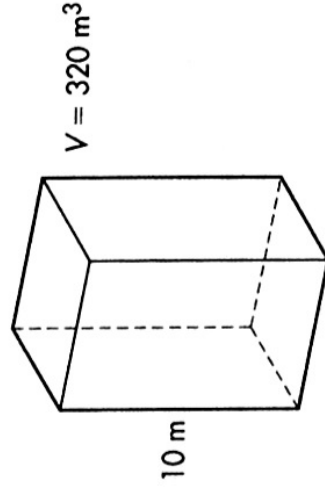
A 3.2 m²

C 320 m²

B 32 m²

D 3,200 m²

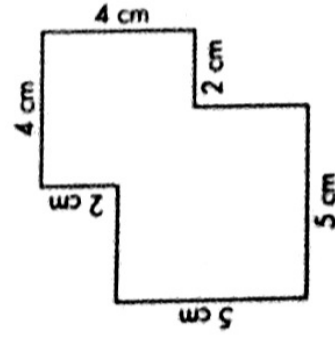
10. **Explain It** Explain how you would find the base area of a rectangular prism if you know the volume and the height.



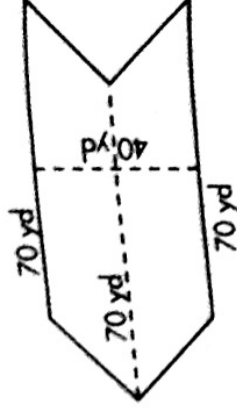
Irregular Shapes and Solids

For 1 and 2, find the area of the irregular shape.

1.

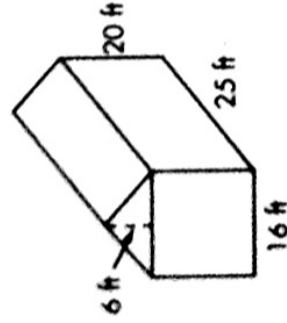


2.

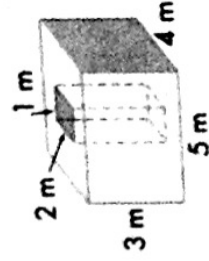


For 3 and 4, find the volume of the irregular solid.

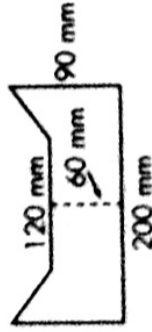
3.



4.



5. What is the area of this irregular shape?



6. Explain it. When do you find an area or volume by separating the figure into smaller figures?

A 1,200 mm²C 13,200 mm²B 12,000 mm²D 14,400 mm²

Problem Solving: Use Objects and Solve a Simpler Problem

Use objects to help you solve a simpler problem. Use the solution to help you solve the original problem.

- 1. Number Sense** Six people can be seated at a table. If two tables are put together, 10 people can be seated. How many tables are needed to make a long table that will seat 22 people?
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- 2.** Donna is building a large cube that will have 5 layers, each with 5 rows of 5 small cubes. How many small cubes will the larger cube contain?
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- 3. Strategy Practice** Jerome's job duties include feeding the fish. There are 5 kinds of fish that he feeds: guppies, zebra danios, betas, platys, and neon tetras.

Use the following clues to find the order in which Jerome feeds them.

- Jerome feeds the guppies third.
- Jerome does not feed the betas right before or right after the guppies.
- Jerome feeds the zebra danios last.
- Jerome feeds the platys after the betas.

- A** guppies, zebra danios, betas, platys, and neon tetras
B betas, platys, guppies, neon tetras, zebra danios
C neon tetras, zebra danios, guppies, platys, betas
D betas, guppies, platys, neon tetras, zebra danios

- 4. Explain It** Suppose Ann is placing bowling pins in the following manner: 1 pin in the first row, 2 pins in the second row, 3 pins in the third row, and so on. How many pins will she use if she has 5 rows in her placement? Explain.
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