



EXERCISES

For Exercises 1–6, draw each figure. Study the drawing tips provided on the previous page before you start.

1. Cylinder
2. Cone
3. Prism with a hexagonal base
4. Sphere
5. Pyramid with a heptagonal base
6. Hemisphere
7. The photo at right shows a prism-shaped building with a pyramid roof and a cylindrical porch. Draw a cylindrical building with a cone roof and a prism-shaped porch.

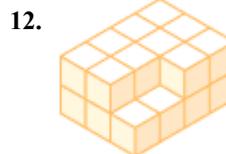


A police station, or *koban*, in Tokyo, Japan

For Exercises 8 and 9, make a drawing to scale of each figure. Use isometric dot paper. Label each figure. (For example, in Exercise 8, draw the solid so that the dimensions measure 2 units by 3 units by 4 units, then label the figure with meters.)

8. A rectangular solid 2 m by 3 m by 4 m, sitting on its biggest face.
9. A rectangular solid 3 inches by 4 inches by 5 inches, resting on its smallest face. Draw lines on the three visible surfaces showing how you can divide the solid into cubic-inch boxes. How many such boxes will fit in the solid?

For Exercises 10–12, use isometric dot paper to draw the figure shown.



A **net** is a two-dimensional pattern that you can cut and fold to form a three-dimensional figure. Another visual thinking skill you will need is the ability to visualize nets being folded into solid objects and geometric solids being unfolded into nets. The net below left can be folded into a cube and the net below right can be folded into a pyramid.

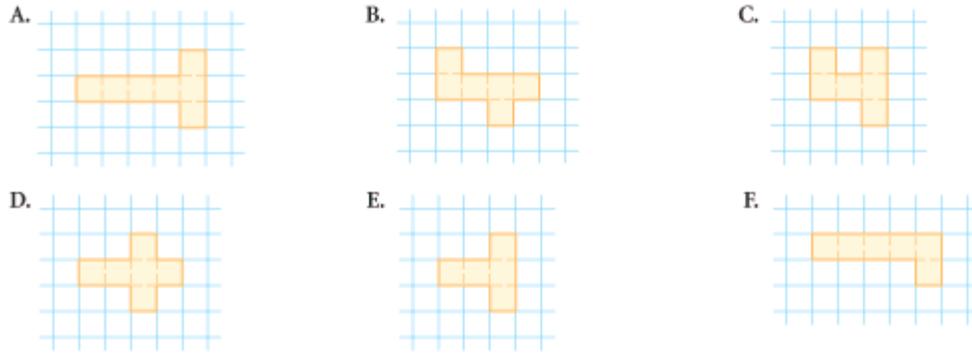


Net for a cube

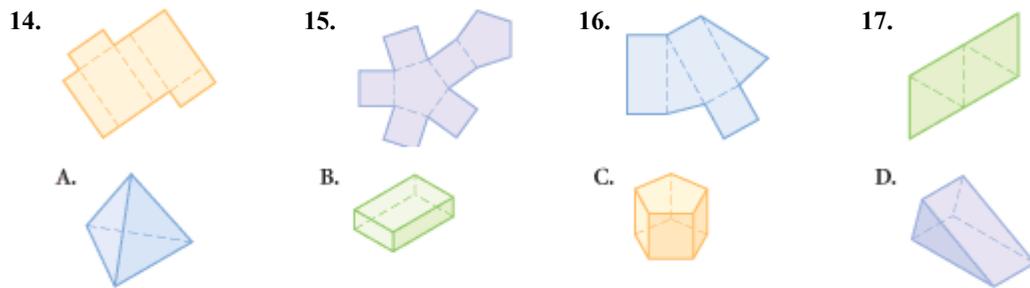


Net for a square-based pyramid

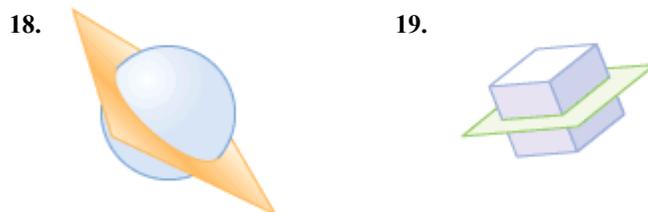
13. Which net(s) will fold to make a cube?



For Exercises 14–17, match the net with its geometric solid.



When a solid is cut by a plane, the resulting two-dimensional figure is called a **section**. For Exercises 18 and 19, sketch the section formed when each solid is sliced by the plane, as shown.



Slicing a block of clay reveals a section of the solid. Here, the section is a rectangle.