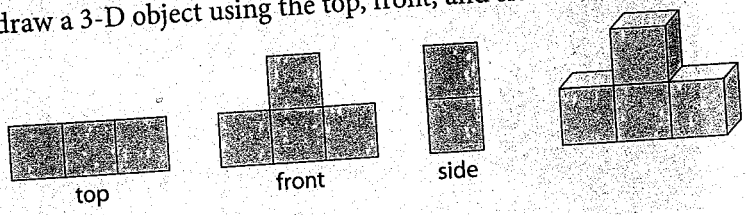
Connect and Reflect

Key Ideas

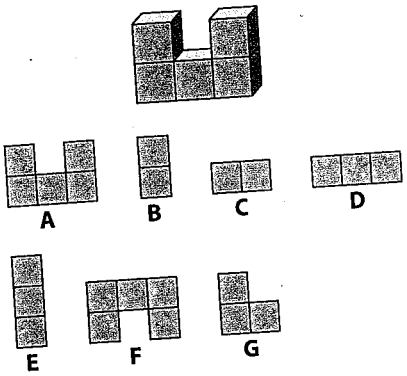
- You need a minimum of three views to accurately describe a 3-D object.
- You can build or draw a 3-D object using the top, front, and side views.



Practise

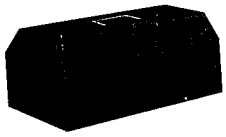
For help with #1 and #2, refer to Example 1 on page 39.

1. Choose the correct top, front, and side views for this object and label each one.



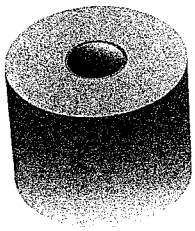
2. Sketch and label the top, front, and side views of each object.

a)



b)

c)

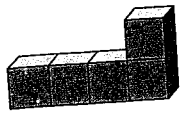


For help with #3, refer to Example 2 on page 40.

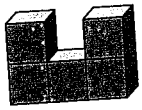
3. Draw the top, front, and side views of each object on grid paper.

a)

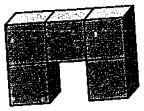
b)



c)



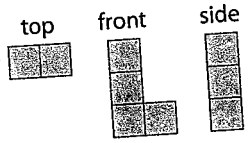
d)



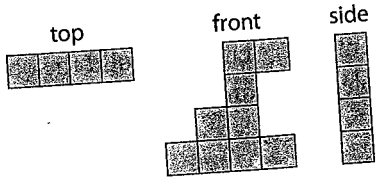
For help with #4, refer to Example 3 on pages 40–41.

4. Use isometric dot paper to draw each 3-D object.

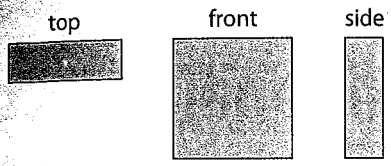
a)



b)



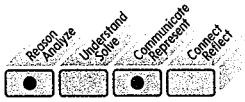
5. A shadow box picture frame has the following views.



Sketch the picture frame on isometric dot paper.

Apply

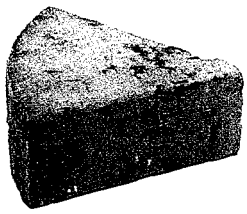
6. **Competency Check** Raina says that she needs all six views to draw an object. Is she correct? Explain why or why not.



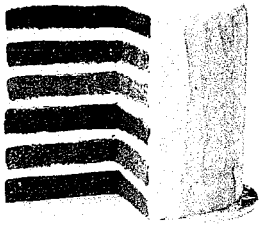
7. Choose two 3-D solid objects from your classroom or home. One of them must have a triangular face. Sketch the top, front, and side views for each one.

8. Sketch the top, front, and left side views of each object.

a)

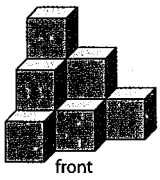


b)

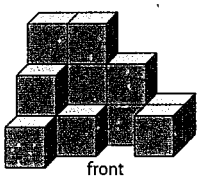


9. Use centimetre cubes to build the objects below. Sketch the front, top, and right side views for each one.

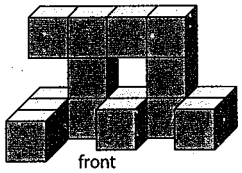
a)



b)

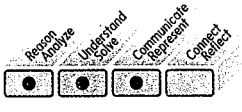


c)



Extend

10. Describe two objects that meet this requirement: When you rotate the object 90°, the top, front, and side views are the same as the top, front, and side views of the object before it was rotated.



11. An ant stops at a vertex of a cube with edge length of 1 metre. The ant moves along the edges of the cube and comes back to the original vertex without visiting any other vertex more than once.

a) Draw diagrams to show the ant's trip around the cube.

b) What is the length, in metres, of the longest trip?