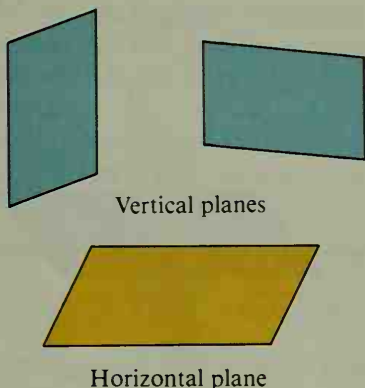


You can think of the ceiling and floor of a room as parts of *horizontal planes*. The walls are parts of *vertical planes*. Vertical planes are represented by figures like those shown in which two sides are vertical. A horizontal plane is represented by a figure like that shown, with two sides horizontal and no sides vertical.



- B** 27. Can two horizontal planes intersect?
28. a. Can two vertical planes intersect?  
 b. Suppose a line is known to be in a vertical plane. Does the line have to be a vertical line?

**Sketch and label the figures described. Use dashes for hidden parts.**

29. Vertical line  $l$  intersects a horizontal plane  $M$  at point  $O$ .
30. Horizontal plane  $P$  contains two lines  $k$  and  $n$  that intersect at point  $A$ .
31. Horizontal plane  $Q$  and vertical plane  $N$  intersect.
32. Vertical planes  $X$  and  $Y$  intersect in  $\overleftrightarrow{AB}$ .
33. Point  $P$  is not in plane  $N$ . Three lines through point  $P$  intersect  $N$  in points  $A$ ,  $B$ , and  $C$ .
- C** 34. Three vertical planes intersect in a line.
35. A vertical plane intersects two horizontal planes in lines  $l$  and  $n$ .
36. Three planes intersect in a point.

## Challenge

If the area of the red square is 1 square unit, what is the area of the blue square? Give a convincing argument.

