



## Vocabulary

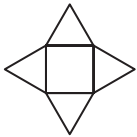
### Review

Draw a line from each *net* in Column A to the three-dimensional figure it represents in Column B.

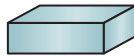
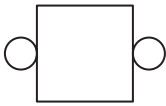
Column A

Column B

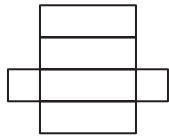
1.



2.



3.



### Vocabulary Builder

**conjecture** (noun, verb) kun JEK chur

**Main Idea:** A **conjecture** is a guess or a prediction.

**Definition:** A **conjecture** is a conclusion reached by using inductive reasoning.

### Use Your Vocabulary

Write *noun* or *verb* to identify how the word *conjecture* is used in each sentence.

4. You make a *conjecture* that your volleyball team will win.

5. Assuming that your sister ate the last cookie is a *conjecture*.

6. You *conjecture* that your town will build a swimming pool.

Take note

### Key Concept Undefined and Defined Terms

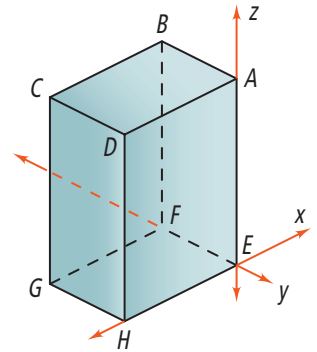
Write the correct word from the list on the right. Use each word only once.

	Undefined or Defined Term	Diagram	Name
7.	point		A
8.	line		$\overleftrightarrow{AB}$
9.	plane		P
10.	segment		$\overline{AB}$
11.	ray		$\overrightarrow{AB}$
12.	opposite rays		$\overrightarrow{CA}, \overrightarrow{CB}$

- line
- opposite rays
- plane
- point
- ray
- segment

Draw a line from each item in Column A to its description in Column B.

- | Column A            | Column B                                     |
|---------------------|--|
| 13. plane $HGE$     | intersection of $\overline{AB}$ and line $z$ |
| 14. $\overline{BF}$ | plane $AEH$                                  |
| 15. plane $DAE$     | line through points $F$ and $E$              |
| 16. line $y$        | intersection of planes $ABF$ and $CGF$       |
| 17. point $A$       | plane containing points $E, F,$ and $G$      |



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Take note

### Postulates 1-1, 1-2, 1-3, and 1-4

18. Complete each postulate with *line*, *plane*, or *point*.

**Postulate 1-1** Through any two points there is exactly one   ?.

line

**Postulate 1-2** If two distinct lines intersect, then they intersect in exactly one   ?.

point

**Postulate 1-3** If two distinct planes intersect, then they intersect in exactly one   ?.

line

**Postulate 1-4** Through any three noncollinear points there is exactly one   ?.

plane

Write P if the statement describes a *postulate* or U if it describes an *undefined term*.

19. A point indicates a location and has no size.
20. Through any two points there is exactly one line.
21. A line is represented by a straight path that has no thickness and extends in two opposite directions without end.
22. If two distinct planes intersect, then they intersect in exactly one line.
23. If two distinct lines intersect, then they intersect in exactly one point.
24. Through any three nontcollinear points there is exactly one plane.



### Problem 2 Naming Segments and Rays

**Got It? Reasoning**  $\overrightarrow{EF}$  and  $\overrightarrow{FE}$  form a line. Are they opposite rays? Explain.

For Exercises 25–29, use the line below.

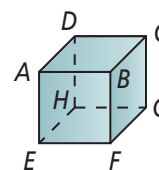


25. Draw and label points  $E$  and  $F$ . Then draw  $\overrightarrow{EF}$  in one color and  $\overrightarrow{FE}$  in another color.
26. Do  $\overrightarrow{EF}$  and  $\overrightarrow{FE}$  share an endpoint? Yes / No
27. Do  $\overrightarrow{EF}$  and  $\overrightarrow{FE}$  form a line? Yes / No
28. Are  $\overrightarrow{EF}$  and  $\overrightarrow{FE}$  opposite rays? Yes / No
29. Explain your answer to Exercise 28.



### Problem 3 Finding the Intersection of Two Planes

**Got It?** Each surface of the box at the right represents part of a plane. What are the names of two planes that intersect in  $\overleftrightarrow{BF}$ ?



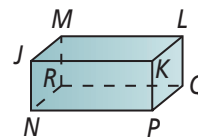
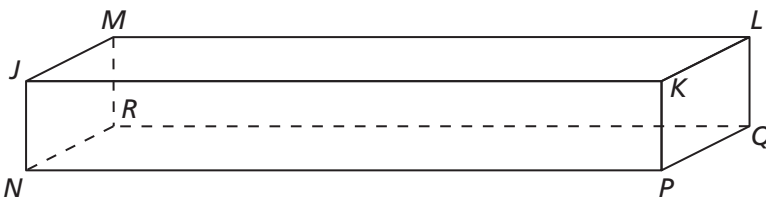
30. Circle the points that are on  $\overleftrightarrow{BF}$  or in one of the two planes.  
A    B    C    D    E    F    G    H
31. Circle another name for plane  $BFG$ . Underline another name for plane  $BFE$ .  
ABF    BCD    BCG    CDH    FGH
32. Now name two planes that intersect in  $\overleftrightarrow{BF}$ .



### Problem 4 Using Postulate 1-4

**Got It?** What plane contains points  $L$ ,  $M$ , and  $N$ ? Shade the plane.

33. Use the figure below. Draw  $\overline{LM}$ ,  $\overline{LN}$ , and  $\overline{MN}$  as dashed segments. Then shade plane  $LMN$ .



**Underline the correct word to complete the sentence.**

34.  $\overline{LM}$ ,  $\overline{LN}$ , and  $\overline{MN}$  form a triangle / rectangle .
35. Name the plane.

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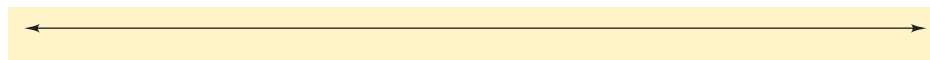


### Lesson Check • Do you UNDERSTAND?

Are  $\overrightarrow{AB}$  and  $\overrightarrow{BA}$  the same ray? Explain.

**Underline the correct symbol to complete each sentence.**

36. The endpoint of  $\overrightarrow{AB}$  is  $A/B$ .
37. The endpoint of  $\overrightarrow{BA}$  is  $A/B$ .
38. Use the line. Draw and label points  $A$  and  $B$ . Then draw  $\overrightarrow{AB}$  and  $\overrightarrow{BA}$ .



39. Are  $\overrightarrow{AB}$  and  $\overrightarrow{BA}$  the same ray? Explain.

\_\_\_\_\_



### Math Success

Check off the vocabulary words that you understand.

- point    line    plane    segment    ray    postulate    axiom

Rate how well you *understand points, lines, and planes*.

