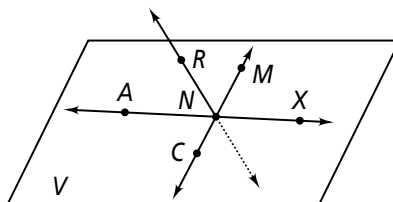


7.2 Practice

Points, Lines, and Planes

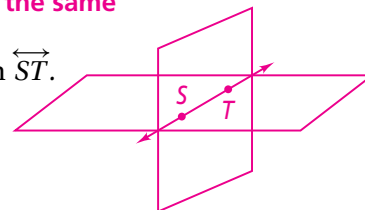
Use the figure below for Exercises 1–8. Note that \overleftrightarrow{RN} pierces the plane at N . It is not coplanar with V .



1. Name two segments shown in the figure. **Answers may vary. Sample: \overline{NM} and \overline{NX}**
2. What is the intersection of \overleftrightarrow{CM} and \overleftrightarrow{RN} ? **point N**
3. Name three collinear points. **Answers may vary. Sample: points C , N , and M**
4. What are two other ways to name plane V ? **Answers may vary. Sample: plane CNX and AXM**
5. Are points R , N , M , and X coplanar? **no**
6. Name two rays shown in the figure. **Answers may vary. Sample: \overrightarrow{NM} and \overrightarrow{NC}**
7. Name the pair of opposite rays with endpoint N . **Answers may vary. Sample: \overrightarrow{NM} and \overrightarrow{NC}**
8. How many lines are shown in the drawing? **3**

For Exercises 9–14, determine whether each statement is *always*, *sometimes*, or *never true*.

9. \overrightarrow{GH} and \overrightarrow{HG} are the same ray. **never**
10. \overrightarrow{JI} and \overrightarrow{JL} are opposite rays. **sometimes**
11. A plane contains only three points. **never**
12. Three noncollinear points are contained in only one plane. **always**
13. If \overleftrightarrow{EG} lies in plane X , point G lies in plane X . **always**
14. If three points are coplanar, they are collinear. **sometimes**
15. **Reasoning** Is it possible for one ray to be shorter in length than another? Explain. **It is not possible. Each ray has an endpoint, but each continues on in one direction without end. They are the same length because they are both infinitely long.**
16. **Open-Ended** Draw a figure of two planes that intersect in \overleftrightarrow{ST} .
Sample:



17. Draw a figure to fit each description.

a. Through any two points there is exactly one line.

Sample answer:



b. Two distinct lines can intersect in only one point.

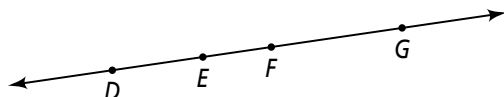
Sample answer:



18. Reasoning Point F lies on \overrightarrow{EG} and point M lies on \overrightarrow{EN} . If F , E , and M are collinear, what must be true of these rays?

They are either opposite rays or identical rays.

20. How many segments can be named from the figure at the right? 6



Use the figure at the right for Exercises 21–29. Name the intersection of each pair of planes or lines.

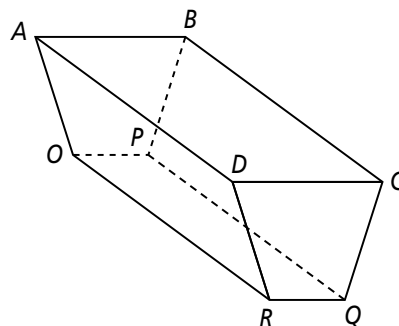
21. planes ABP and BCD \overleftrightarrow{AB}

22. \overleftrightarrow{RQ} and \overleftrightarrow{RO} point R

23. planes ADR and DCQ \overleftrightarrow{DR}

24. planes BCD and BCQ \overleftrightarrow{BC}

25. \overleftrightarrow{OP} and \overleftrightarrow{QP} point P



Name two planes that intersect in the given line. Answers may vary. Samples given:

26. \overleftrightarrow{RO}
 ODR and OPR

27. \overleftrightarrow{CQ}
 CQR and CQP

28. \overleftrightarrow{DA}
 OAD and BAD

29. \overleftrightarrow{BP}
 CBP and APB