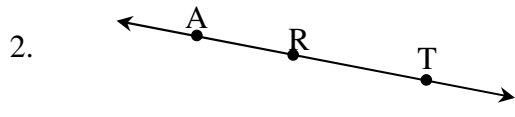
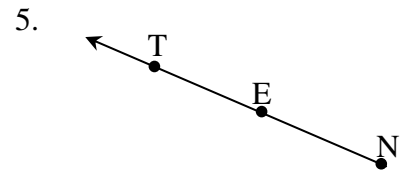
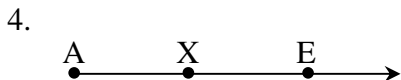
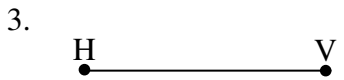


# 1.1 – Points, Lines, and Planes

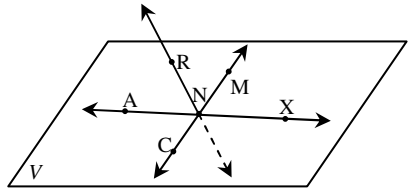
Name each line two different ways.



Name each line segment or ray two different ways.



Use the figure below for Exercises 6–13. Note that  $\overleftrightarrow{RN}$  pierces the plane at  $N$ . It is not coplanar with  $V$ .



6. Name two segments shown in the figure.

7. What is the intersection of  $\overleftrightarrow{CM}$  and  $\overleftrightarrow{RN}$ ?

8. Name three collinear points.

9. What are two other ways to name plane  $V$ ?

10. Are points  $R, N, M,$  and  $X$  coplanar?

11. Name two rays shown in the figure.

12. Name the pair of opposite rays with endpoint  $N$ .

13. How many lines are shown in the drawing?

For Exercises 14–19, determine whether each statement is *always (A)*, *sometimes (S)*, or *never (N)* true.

14.  $\overrightarrow{GH}$  and  $\overrightarrow{HG}$  are the same ray. \_\_\_\_\_

15.  $\overrightarrow{JI}$  and  $\overrightarrow{JL}$  are opposite rays. \_\_\_\_\_

16. A plane contains only three points. \_\_\_\_\_

17. Three noncollinear points are contained in only one plane. \_\_\_\_\_

18. If  $\overleftrightarrow{EG}$  lies in plane  $X$ , point  $G$  lies in plane  $X$ . \_\_\_\_\_

19. If three points are coplanar, they are collinear. \_\_\_\_\_

20. Reasoning: Is it possible for one ray to be shorter in length than another? Explain.

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21. Open-Ended: Draw a figure of two planes that intersect in  $\overleftrightarrow{ST}$ .

22. Draw a figure to fit each description

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

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

23. 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?

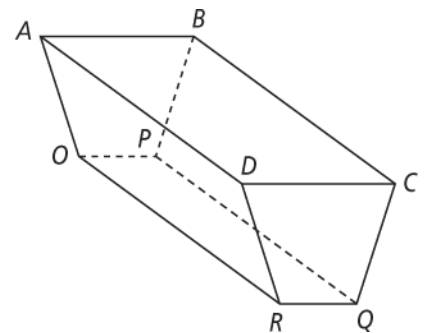
Use the figure for Exercises 24–28. Name the intersection of each pair of planes or lines.

24. planes  $ABP$  and  $BCD$

27. planes  $BCD$  and  $BCQ$

25.  $\overrightarrow{RQ}$  and  $\overrightarrow{RO}$

28.  $\overrightarrow{OP}$  and  $\overrightarrow{QP}$



26. planes  $ADR$  and  $DCQ$