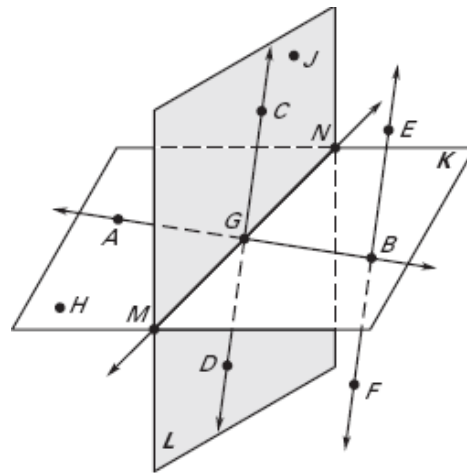**In Exercises 1–16, use the diagram.**

1. Give five other names for $\overleftrightarrow{AB}$.

2. Name four sets of three points that are collinear.

3. Name three points that are coplanar with both plane *K* and plane *L*.

4. Name all points that are not coplanar with points *A, B,* and *H*.

5. Give another name for $\overline{CG}$.

6. Name all rays with endpoint *G*.

7. Name four pairs of opposite rays.

8. Give another name for $\overrightarrow{FB}$.

9. Are points *A, G,* and *N* collinear?

10. Are points *A, G,* and *N* coplanar?

11. Are points *C, D,* and *G* collinear?

12. Are points *C, D,* and *G* coplanar?

13. Name the intersection of $\overleftrightarrow{AB}$ and $\overleftrightarrow{MN}$.

14. Name the intersection of $\overleftrightarrow{CD}$ and plane *ABH*.

15. Name the intersection of plane *K* and plane *L*.

16. Name the intersection of $\overleftrightarrow{EF}$ and plane *K*.

Sketch the figure described.

17. Three lines with only two points of intersection

18. Two planes that do not intersect

19. Two rays that intersect at their endpoints

20. Two collinear rays that do not intersect

You are given an equation of a line and a point. Use substitution to determine whether the point is on the line.

21. $y = 3x + 1$; $A(2, 13)$

22. $y = 4x - 3$; $A(5, 17)$
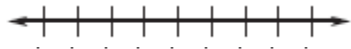
23. $2y = -3x - 9$; $A(-1, -3)$

24. $5x + 4y = 28$; $A(4, -2)$
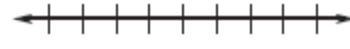
25. $6y - 7x = 8$; $A(6, 4)$

26. $-2x - 9y = -20$; $A(-8, 4)$

Graph the inequality on a number line. Tell whether the graph is a *segment,* a *ray* or *rays*, a *point,* or a *line*.

27. $x \geq 6$
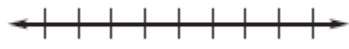
28. $x \leq -10$

29. $-5 \geq x \leq 3$

30. $x \geq 4$ or $x \leq 7$
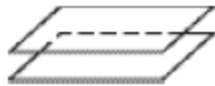
31. $x \geq 0$ or $x \leq -2$

Answer Key

1. $\overleftrightarrow{BA}$, $\overleftrightarrow{AG}$, $\overleftrightarrow{GA}$, $\overleftrightarrow{BG}$ and $\overleftrightarrow{GB}$

2. *A*, *G*, and *B*; *C*, *G*, and *D*; *E*, *B*, and *F*; *M*, *G*, and *N*

3. points *M*, *G*, and *N*

4. points *C*, *D*, *E*, *F*, and *J*

5. $\overline{GC}$

6. $\overrightarrow{GA}$, $\overrightarrow{GB}$, $\overrightarrow{GC}$, $\overrightarrow{GD}$, $\overrightarrow{GM}$, and $\overrightarrow{GN}$

7. $\overrightarrow{GA}$ and $\overrightarrow{GB}$, $\overrightarrow{GC}$ and $\overrightarrow{GD}$, $\overrightarrow{GM}$ and $\overrightarrow{GN}$, $\overrightarrow{BE}$ and $\overrightarrow{BF}$

8. $\overrightarrow{FE}$

9. no

10. yes

11. yes

12. yes

13. point *G*

14. point *G*

15. $\overrightarrow{MN}$

16. point *B*

17. *Sample answer:*

18. *Sample answer:*

19. *Sample answer:*

20. *Sample answer:*

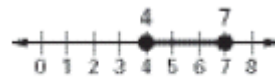
21. no

22. yes
23. yes
24. no
25. no
26. yes
27.

ray

28.

ray

29.

segment

30.

segment

31.

rays