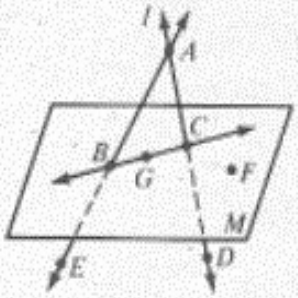
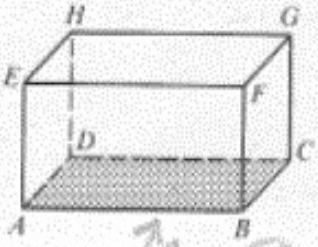
Classify each statement as true or false.



1. $\overleftrightarrow{BC}$ is in plane M. **true**
2. Plane M contains $\overleftrightarrow{AB}$. **false**
3. Line l intersects $\overleftrightarrow{AB}$ at point B. **false**
4. $\overleftrightarrow{AB}$ and $\overleftrightarrow{DA}$ intersect at A. **true**
5. $\overleftrightarrow{AD}$ is in plane M. **false**
6. Plane M intersects $\overleftrightarrow{AE}$ at point B. **true**
7. $\overleftrightarrow{AE}$ intersects plane M at point B. **true**
8. A, B, and E are collinear. **true**
9. B, F, and D are collinear. **false**
10. A, B, and C are coplanar. **true**
11. B, C, F, and G are coplanar. **true**
12. A, B, C, and G are coplanar. **true**
13. A, B, C, and F are coplanar. **false**

The plane that contains the shaded region can be called plane *ABCD*. Answers may vary.



14. Name three lines that intersect at point G. $\overleftrightarrow{HG}$, $\overleftrightarrow{CG}$, $\overleftrightarrow{FG}$
15. Name two planes whose intersection is $\overleftrightarrow{FB}$. ***EFBA*, *FGCB***
16. Name the intersection of plane $EHGF$ and plane $EFBA$. $\overleftrightarrow{EF}$
17. Name two planes that do not intersect. ***ABCD*, *EFGH*; *FGCB*, *EHDA*; *HGCD*, *EFBA***
18. Are points D, H, G, and C coplanar? **yes**
19. Are points D, H, G, and F coplanar? **no**
20. Are points A, B, G, and H coplanar? **yes**

Sketch and label the figures described. Use dashes for parts hidden from view. See Additional Answers.

21. Line $\overleftrightarrow{AB}$ intersects plane X at point C.
22. Two planes M and N intersect in line l.
23. Horizontal plane P contains two lines $\overleftrightarrow{RS}$ and $\overleftrightarrow{TU}$ that intersect at point O.