Name _____ Date _____ Class _____

LESSON 1-1

Reteach

Understanding Points, Lines, and Planes

A **point** has no size. It is named using a capital letter.
All the figures below contain points.

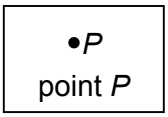
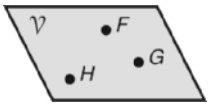


Figure	Characteristics	Diagram	Words and Symbols
line	0 endpoints extends forever in two directions		line *AB* or $\overleftrightarrow{AB}$
line segment or segment	2 endpoints has a finite length		segment *XY* or $\overline{XY}$
ray	1 endpoint extends forever in one direction		*ray RQ* or $\overrightarrow{RQ}$ *A ray is named starting with its endpoint.*
plane	extends forever in all directions		plane *FGH* or plane $\mathcal{V}$

Draw and label a diagram for each figure.

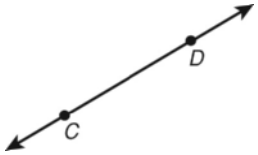
1. point *W*

2. line *MN*

3. $\overline{JK}$

4. $\overrightarrow{EF}$

Name each figure using words and symbols.

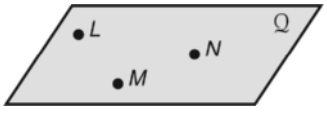
5. 

_____

6. 

_____

7. Name the plane in two different ways.



_____

8. 

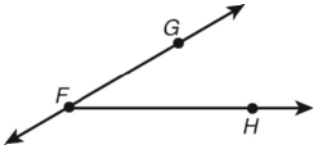
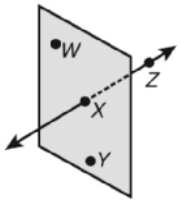
_____

Name _____ Date _____ Class _____

LESSON 1-1

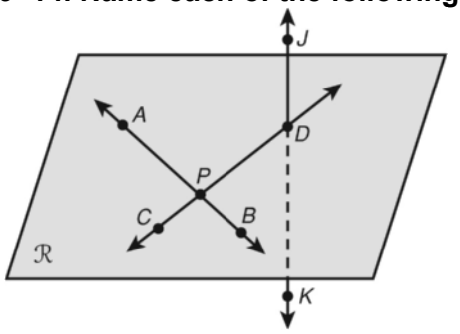
Reteach

Understanding Points, Lines, and Planes continued

Term	Meaning	Model
collinear	points that lie on the same line	 *F* and *G* are collinear. *F*, *G*, and *H* are noncollinear.
noncollinear	points that do not lie on the same line	
coplanar	points or lines that lie in the same plane	 *W*, *X*, and *Y* are coplanar. *W*, *X*, *Y*, and *Z* are noncoplanar.
noncoplanar	points or lines that do not lie in the same plane	

Figures that intersect share a common set of points. In the first model above, $\overleftrightarrow{FH}$ intersects $\overleftrightarrow{FG}$ at point *F*. In the second model, $\overleftrightarrow{XZ}$ intersects plane *WXY* at point *X*.

Use the figure for Exercises 9–14. Name each of the following.



9. three collinear points

_____

10. three noncollinear points

_____

11. four coplanar points

_____

12. four noncoplanar points

_____

13. two lines that intersect $\overleftrightarrow{CD}$

_____

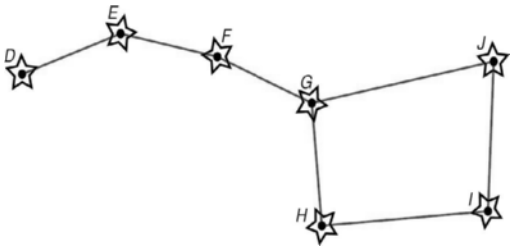
14. the intersection of $\overleftrightarrow{JK}$ and plane $\mathcal{R}$

_____

Answer Key

LESSON 1-1

Practice A

1. point *A* and point *C*
2. point *B*
3. point *A*, point *B*, and point *C*
4. line
5. line
6. plane
7. plane
8. point *T* and point *U*
9. one
10. point *U*
11. 

12. $\overleftrightarrow{PQ}$

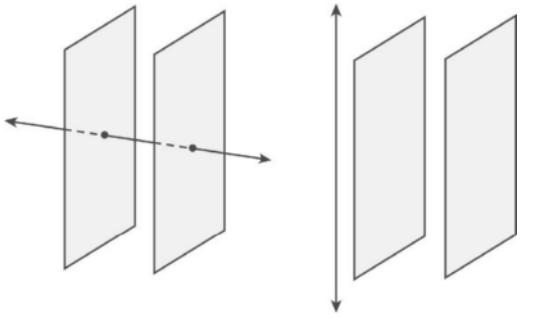
Practice B

1. Possible answers: plane *BCD*; plane *BED*
2. $\overline{BD}, \overline{BC}, \overline{BE}$, or $\overline{CE}$
3. Possible answers: $\overrightarrow{EC}; \overrightarrow{BC}; \overrightarrow{BE}$
4. Points *B*, *C*, and *E*
5. Possible answers: points *B*, *C*, and *D* or point *B*, *E*, and *D*
6. point *B*
7. $\overrightarrow{BC}$ and $\overrightarrow{BE}$
8. points *X*, *Y*, and *Z*
9. point *Z*
10. $\overleftrightarrow{XZ}$ and $\overleftrightarrow{YZ}$
11. $\overleftrightarrow{XY}$
12. 

13. 

14. 

Practice C

1. A plane is named with three noncollinear points. *H*, *I*, and *J* are collinear.
2. Possible answers: plane *HIK*; plane *HJK*; plane *IJK*
3. $\overleftrightarrow{HI}, \overleftrightarrow{HJ}, \overleftrightarrow{IJ}, \overleftrightarrow{IH}, \overleftrightarrow{JH}$, and $\overleftrightarrow{JI}$
4. $\overrightarrow{ST}$ and $\overrightarrow{TS}$ are not the same figure because $\overrightarrow{ST}$ has its endpoint at *S* and $\overrightarrow{TS}$ has its endpoint at *T*.
5. $\overrightarrow{ST}$ and $\overrightarrow{TS}$ are not opposite rays because they do not have the same endpoint.
6. a line
7. point, line, plane
8. Through any three noncollinear points there is exactly one plane containing them.
9. If two planes intersect, then they intersect in exactly one line.
10. 

Reteach

1. •*W*
2. 

3. 

4. 

5. line *CD* or $\overleftrightarrow{CD}$
6. ray *ST* or $\overrightarrow{ST}$
7. plane *LMN*; plane Q
8. segment *WX*; $\overline{WX}$
9. Possible answers: *A*, *P*, and *B*; *C*, *P*, and *D*; *J*, *D*, and *K*
10. Sample answer: *A*, *P*, and *D*
11. Sample answer: *C*, *P*, *B*, and *D*
12. Sample answer: *J*, *D*, *P*, and *B*
13. $\overleftrightarrow{AB}$ and $\overleftrightarrow{JK}$
14. point *D*