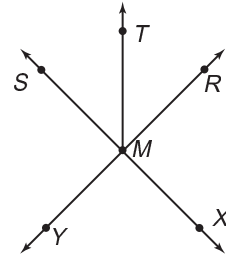


Skills Practice

Points, Lines, and Planes

Use the figure at the right to name examples of each term. 1-10. Samples answers are given.

- four points **four of the following: S, T, M, R, X, Y**
- two lines **\overleftrightarrow{SX} , \overleftrightarrow{YR}**
- four segments **\overline{MR} , \overline{MS} , \overline{MT} , \overline{MX}**
- one ray whose endpoint is M **\overrightarrow{MY}**
- three collinear points **S, M, and X**
- one point that is *not* on \overleftrightarrow{YR} **S**
- a segment with points T and M as its endpoints **\overline{TM}**
- a line that does not contain R **\overleftrightarrow{SX}**
- a line containing M **\overleftrightarrow{RY}**
- a segment that lies on \overleftrightarrow{YR} **\overline{MR}**



Determine whether each model suggests a point, a line, a ray, a segment, or a plane.

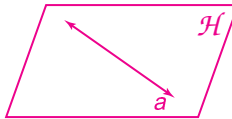
- | | |
|---|--|
| 11. a toothpick segment | 12. a floor plane |
| 13. the tip of a pin point | 14. the surface of the water in a swimming pool plane |
| 15. a beam of light from a laser ray | 16. fence pole segment |

Draw and label a figure for each situation described. 17-20. Sample answers are given.

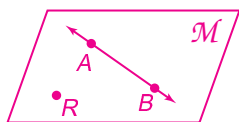
17. point K lies on \overleftrightarrow{RT}



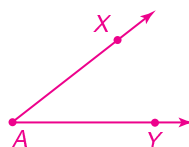
18. plane \mathcal{H} contains line a



19. \overleftrightarrow{AB} lies in plane \mathcal{M} containing point R not on \overleftrightarrow{AB}



20. \overrightarrow{AX} and \overrightarrow{AY} such that point A is the only point common to both rays



Skills Practice

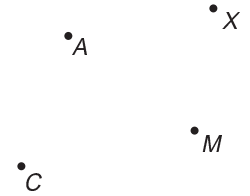
Postulates

Refer to the figure at the right.

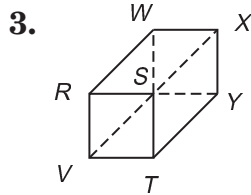
1. Name all of the different lines that can be drawn through the set of points.

\overleftrightarrow{AX} , \overleftrightarrow{AM} , \overleftrightarrow{AC} , \overleftrightarrow{XM} , \overleftrightarrow{XC} , \overleftrightarrow{MC}

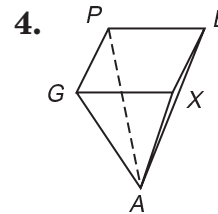
2. Name the intersection of \overleftrightarrow{AX} and \overleftrightarrow{AM} . **point A**



Name all of the planes that are represented in each figure.



planes $RSTV$, $SXYT$, $WXYS$, $RWSV$, $RWXS$, $VSYT$



planes GXA , XEA , DEA , GDA , $DEXG$

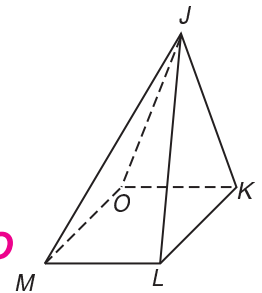
Refer to the figure at the right.

5. Name the intersection of plane JLM and plane JKL . \overleftrightarrow{JL}

6. Name the intersection of plane JKO and plane JOM . \overleftrightarrow{JO}

7. Name two planes that intersect in \overleftrightarrow{ML} . **planes JLM and $MLKO$**

8. Name two planes that intersect in \overleftrightarrow{JM} . **planes JOM and JLM**



Determine whether each statement is true or false. If a statement is false, explain why.

9. If you have two points, then there is only one line that contains both points. **true**
10. The intersection of two distinct lines is two points.
False; two distinct lines intersect at one point.
11. If you have three noncollinear points, then you have two different planes.
False; three noncollinear points determine one plane.
12. A line is the intersection of two distinct planes. **true**
13. One point can be the only intersection of two planes.
False; two planes intersect in a line.
14. Three planes can intersect in one line. **true**