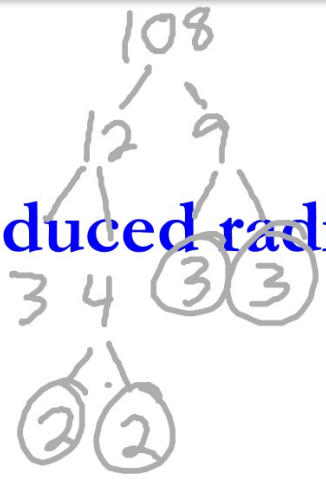
LESSON 1–1 Points, Lines, and Planes

Bell Ringer #2:



Put the following in reduced radical form

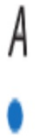
1) $\sqrt{108} = 6\sqrt{3}$

2) Name one thing you do when you exit my classroom.

LESSON 1–1 Points, Lines, and Planes

A point is a location. It has neither shape nor size.

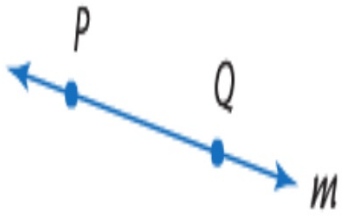
Named by	a capital letter
Example	point *A*



LESSON 1–1

Points, Lines, and Planes

A line is made up of points and has no thickness or width.
There is exactly one line through any two points.

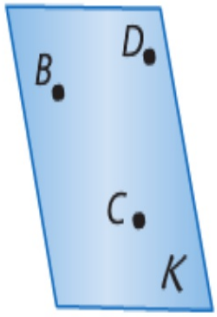


Named by the letters representing two points on the line or a lowercase script letter

Example line m, line PQ or $\overleftrightarrow{PQ}$, line QP or $\overleftrightarrow{QP}$

LESSON 1–1 Points, Lines, and Planes

A **plane** is a flat surface made up of points that extends infinitely in all directions. There is exactly one plane through any three points not on the same line.



Named by	a capital script letter or by the letters naming three points that are not all on the same line
Example	plane *K*, plane *BCD*, plane *CDB*, plane *DCB*, plane *DBC*, plane *CBD*, plane *BDC*

collinear - points that lie on the same line

coplanar - points that lie in the same plan

LESSON 1–1 Points, Lines, and Planes

EXAMPLE 1 Name Lines and Planes

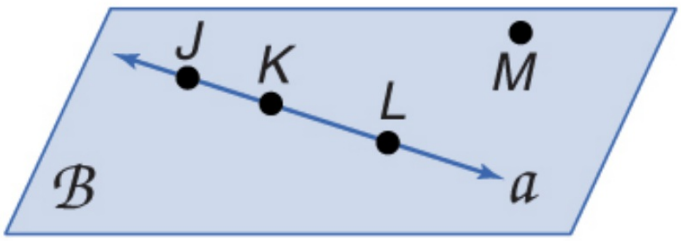
A. Use the figure to name a line containing point *K*.

line JL

$\overleftrightarrow{JL}$

line LJ

$\overleftrightarrow{LJ}$

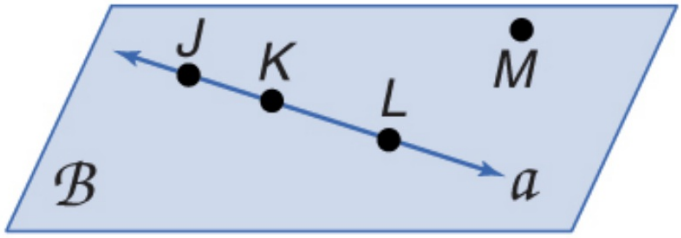


line a

EXAMPLE 1 Name Lines and Planes

B. Name a point not on line a.

point M

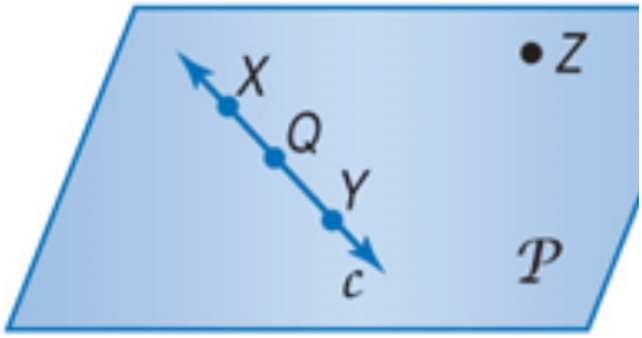


EXAMPLE 2

A. Use the figure to name a line containing the point *X*.

line c

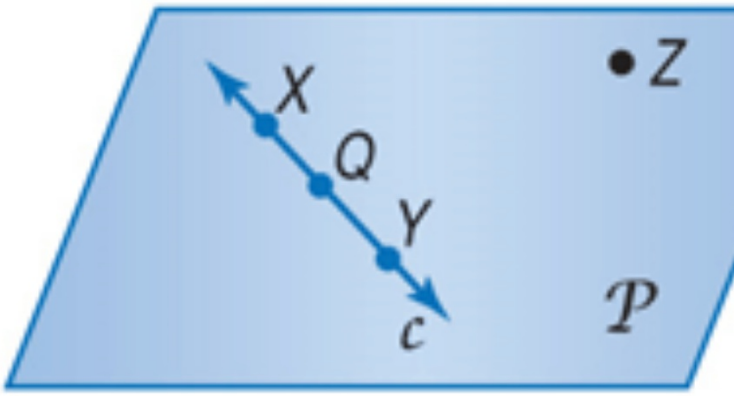
$\overleftrightarrow{XY}$ $\overleftrightarrow{YX}$ $\overleftrightarrow{QY}$



EXAMPLE 2

B. Name the plane.

plane P



Real-World Example 3 Model Points, Lines, and Pl

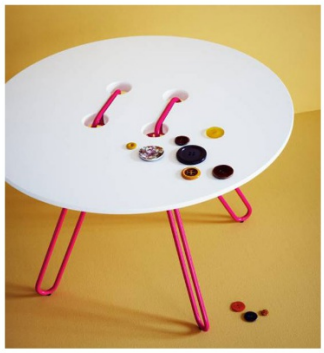
A. Name the geometric shape modeled by a 10 x 12 patio.

a plane

Real-World Example 3 Model Points, Lines, and Pl

B. Name the geometric shape modeled by a button on a table.

a point



Real-World Example 4

A. Name the geometric shape modeled by a colored dot on a map used to mark the location of a city.

a point

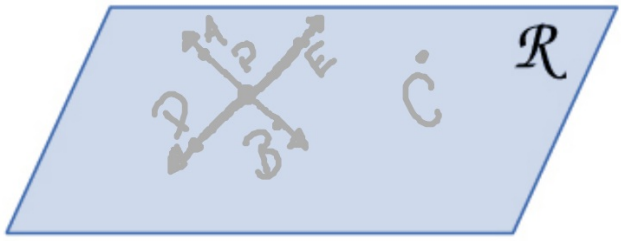
Real-World Example 4

B. Name the geometric shape modeled by the ceiling of your classroom.

a plane

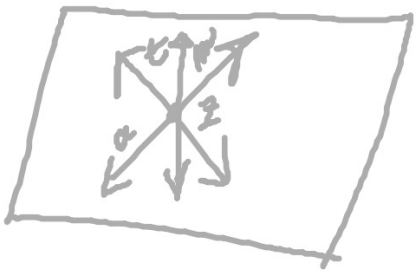
EXAMPLE 5 Draw Geometric Figures

Draw and label a figure for the following situation. Plane R contains lines AB and DE, which intersect at point P. Add point C on plane R so that it is not collinear with $\overleftrightarrow{AB}$ or $\overleftrightarrow{DE}$.



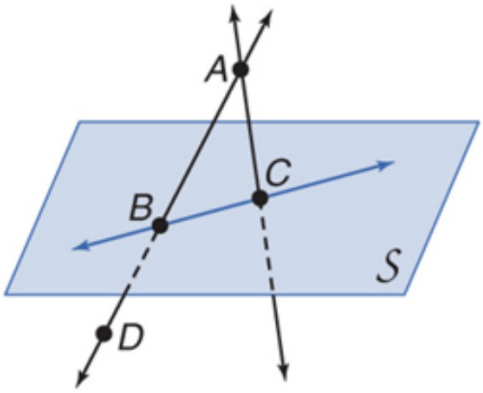
EXAMPLE 6

Draw and label a figure for the following. Plane *D* contains line *a*, line *m*, and line *t*, with all three lines intersecting at point *Z*. Also, point *F* is on plane *D* and is not collinear with any of the three given lines.



EXAMPLE 6 Interpret Drawings

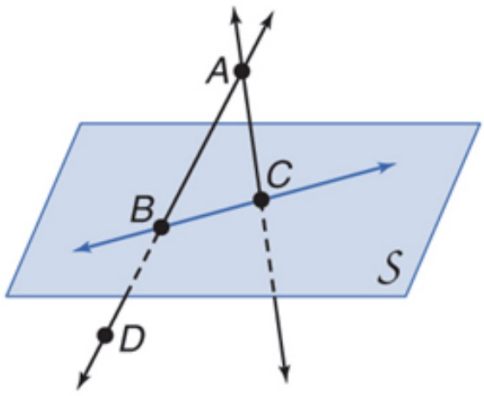
A. How many planes appear in this figure?



EXAMPLE 6 Interpret Drawings

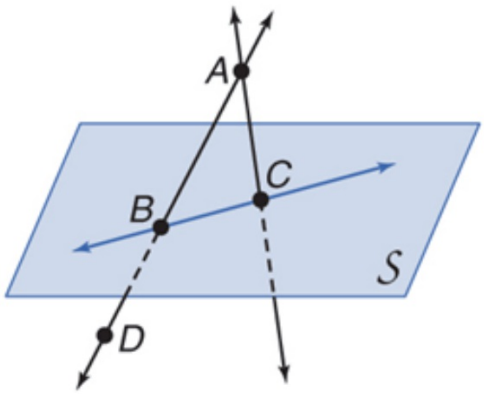
B. Name three points that are collinear.

A, B, D



EXAMPLE 6 Interpret Drawings

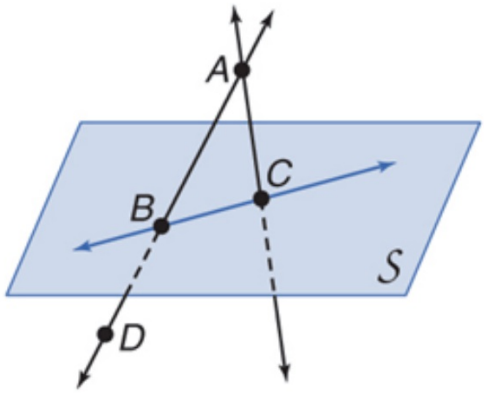
C. Are points *A*, *B*, *C*, and *D* coplanar? Explain.



EXAMPLE 6 Interpret Drawings

D. At what point do $\overleftrightarrow{DB}$ and $\overleftrightarrow{CA}$ intersect?

point A



LESSON 1–1 Points, Lines, and Planes

You can either work on your own or with 1 to 2 other people near you.

Skills Practice 1-1 problem # 1 - 12 all (workbook).

You need to be finished in 15 minutes!

Times Up!!!!!

Solutions

LESSON 1–1 Points, Lines, and Planes

Assignment, due at the start of next class.

Practice 1-1, problem # 1 - 3 all and 6 - 13 all.

Exit Ticket:

Please use the exit magnets on your way out everyday to indicate how well you got it.

Today:
I can understand points lines and planes.