BELLWORK

1. $\dfrac{3x+17}{2} = 25$

2. $4(3x-5) = 64$

A **postulate**, or *axiom*, is a statement that is accepted as true without proof.
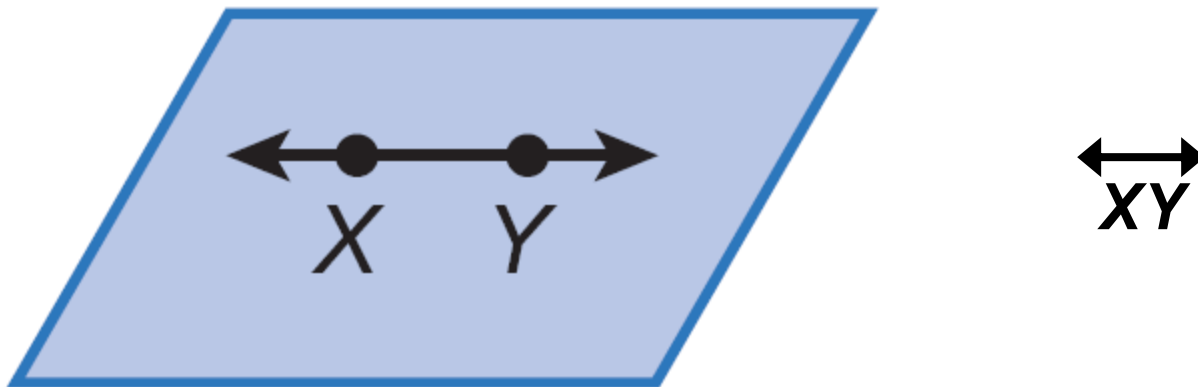
Postulates — Points, Lines, and Planes

1-1-1 Through any two points there is exactly one line.

1-1-2 Through any three noncollinear points there is exactly one plane containing them.

1-1-3 If two points lie in a plane, then the line containing those points lies in the plane.
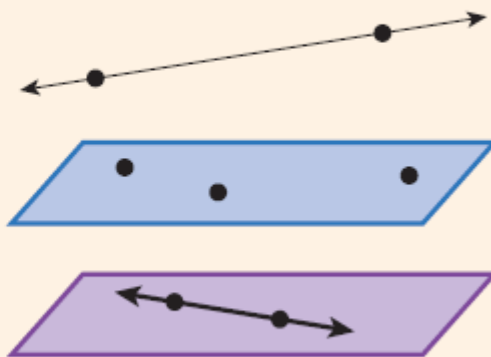
Example 3: Identifying Points and Lines in a Plane

Name a line that passes through two points.

Check It Out! Example 3

Name a plane that contains three noncollinear points.
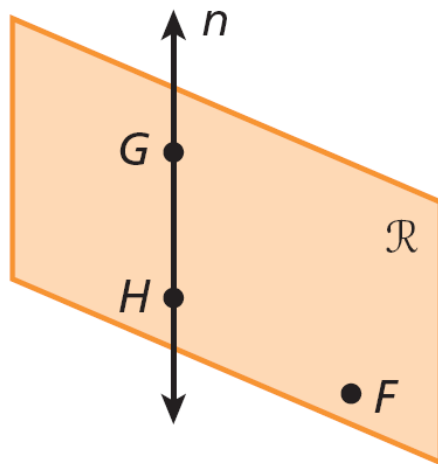
Possible answer: plane *GHF*

Recall that a system of equations is a set of two or more equations containing two or more of the same variables. The coordinates of the solution of the system satisfy all equations in the system. These coordinates also locate the point where all the graphs of the equations in the system *intersect*.

An intersection is the set of all points that two or more figures have in common. The next two postulates describe intersections involving lines and planes.

Postulates — **Intersection of Lines and Planes**

1-1-4   If two lines intersect, then they intersect in exactly one point.

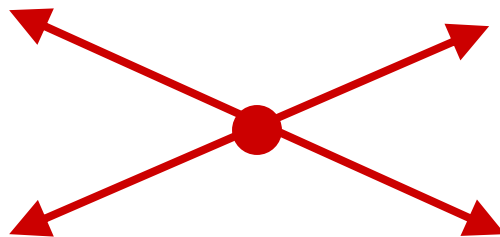**1-1-5**   If two planes intersect, then they intersect in exactly one line.

Use a dashed line to show the hidden parts of any figure that you are drawing. A dashed line will indicate the part of the figure that is not seen.
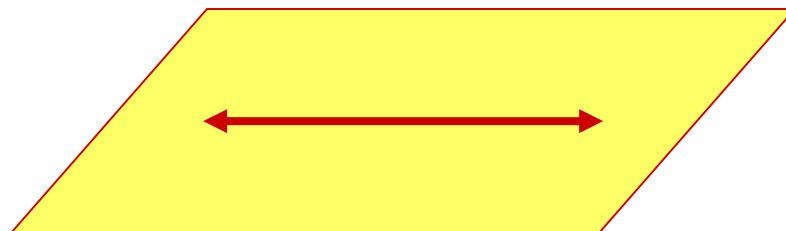
Example 4: Representing Intersections

A. Sketch two lines intersecting in exactly one point.

B. Sketch a figure that shows a line that lies in a plane.

Check It Out! Example 4

Sketch a figure that shows two lines intersect in one point in a plane, but only one of the lines lies in the plane.
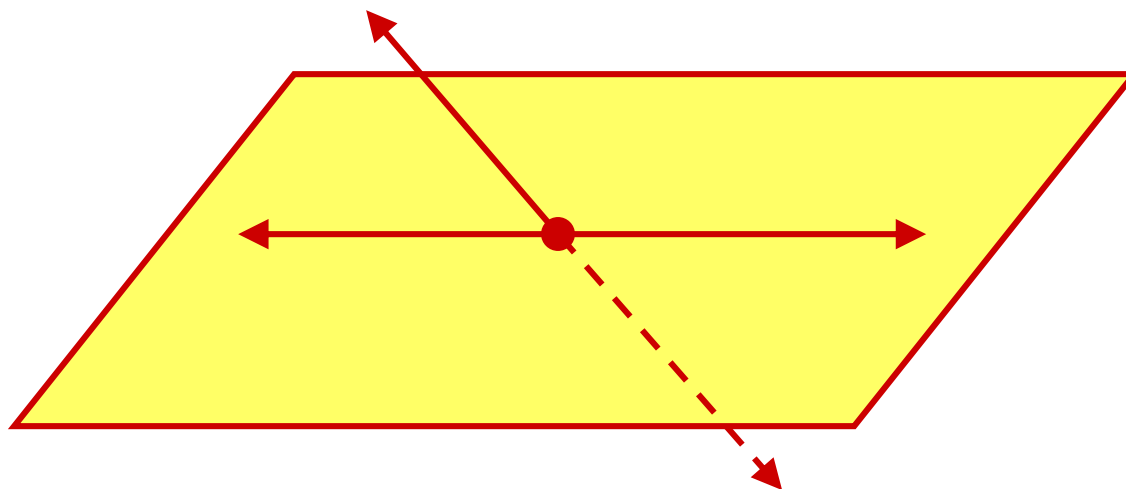
Lesson Quiz: Part I

1. Two opposite rays.

$\overrightarrow{CB}$ **and** $\overrightarrow{CD}$

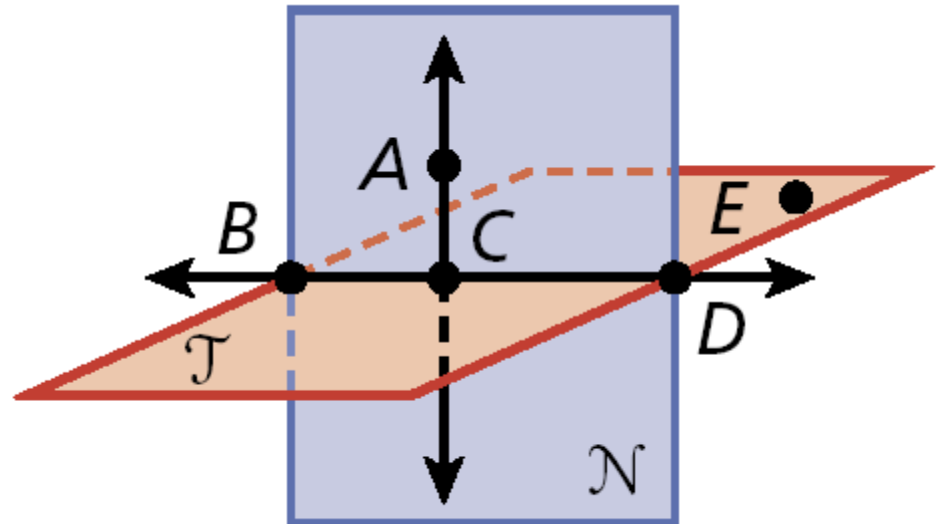**2.** A point on $\overrightarrow{BC}$.

Possible answer: D

3. The intersection of plane $\mathcal{N}$ and plane $\mathcal{T}$.

Possible answer: $\overleftrightarrow{BD}$

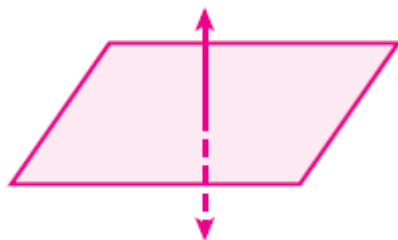**4.** A plane containing E, D, and B.

Plane $\mathcal{T}$

Lesson Quiz: Part II

Draw each of the following.

5. a line intersecting a plane at one point

6. a ray with endpoint *P* that passes through *Q*

In Class and Homework:

Page 9 # 1–19, 25 – 27, 31 – 34