

## 9.4 The Intersection of Three Planes

**Minds On:** In what ways might 3 planes interact? Use the table to classify, sketch, and describe the possible cases and solutions.

<b>Consistent Systems</b>	<b>Inconsistent Systems</b>

Determine the solution(s) to the following system of equations AND describe the way in which these planes intersect (or don't intersect).

**System 1:**

- 1)  $x - y + z = -2$
- 2)  $2x - y - 2z = -9$
- 3)  $3x + y - z = -2$

**System 5:**

- 1)  $x - y + 2z = -1$
- 2)  $x - y + 2z = 3$
- 3)  $x - 3y + z = 0$

**System 2:**

- 1)  $2x - y + z = 1$
- 2)  $3x - 5y + 4z = 3$
- 3)  $3x + 2y - z = 0$

**System 6:**

- 1)  $x + y + z = 5$
- 2)  $x + y + z = 4$
- 3)  $x + y + z = 5$

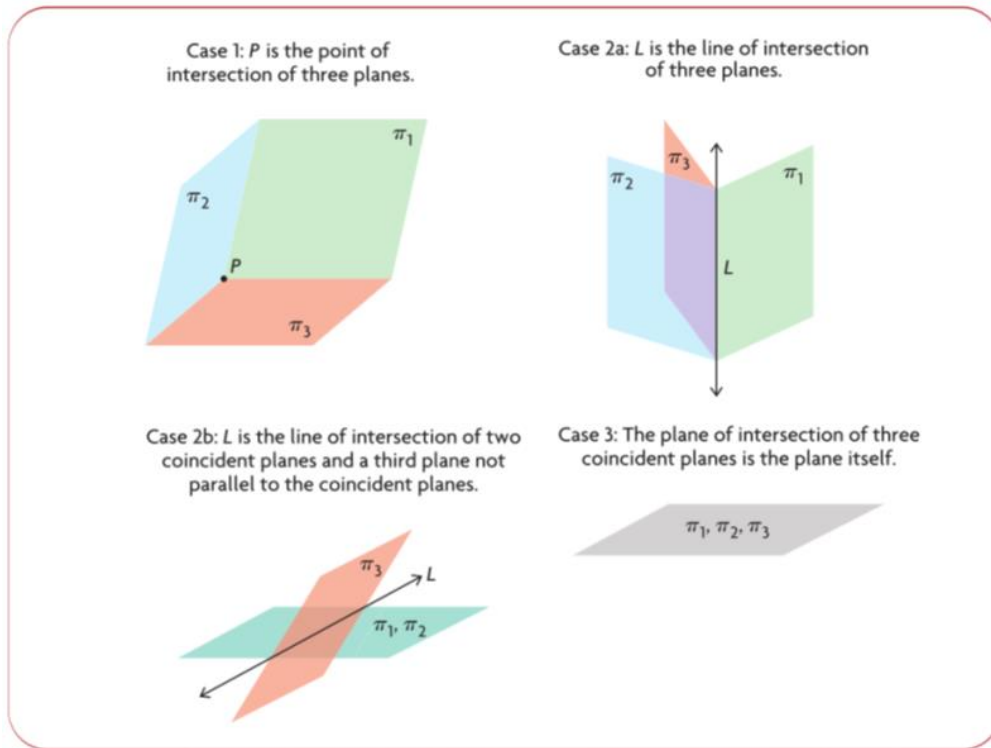
**System 3:**

- 1)  $2x + y + z = 1$
- 2)  $4x - y - z = 5$
- 3)  $8x - 2y - 2z = 10$

**System 4:**

- 1)  $x - y + z = 1$
- 2)  $x + y + 2z = 2$
- 3)  $x - 5y - z = 1$

## Consistent Systems



## Inconsistent Systems

